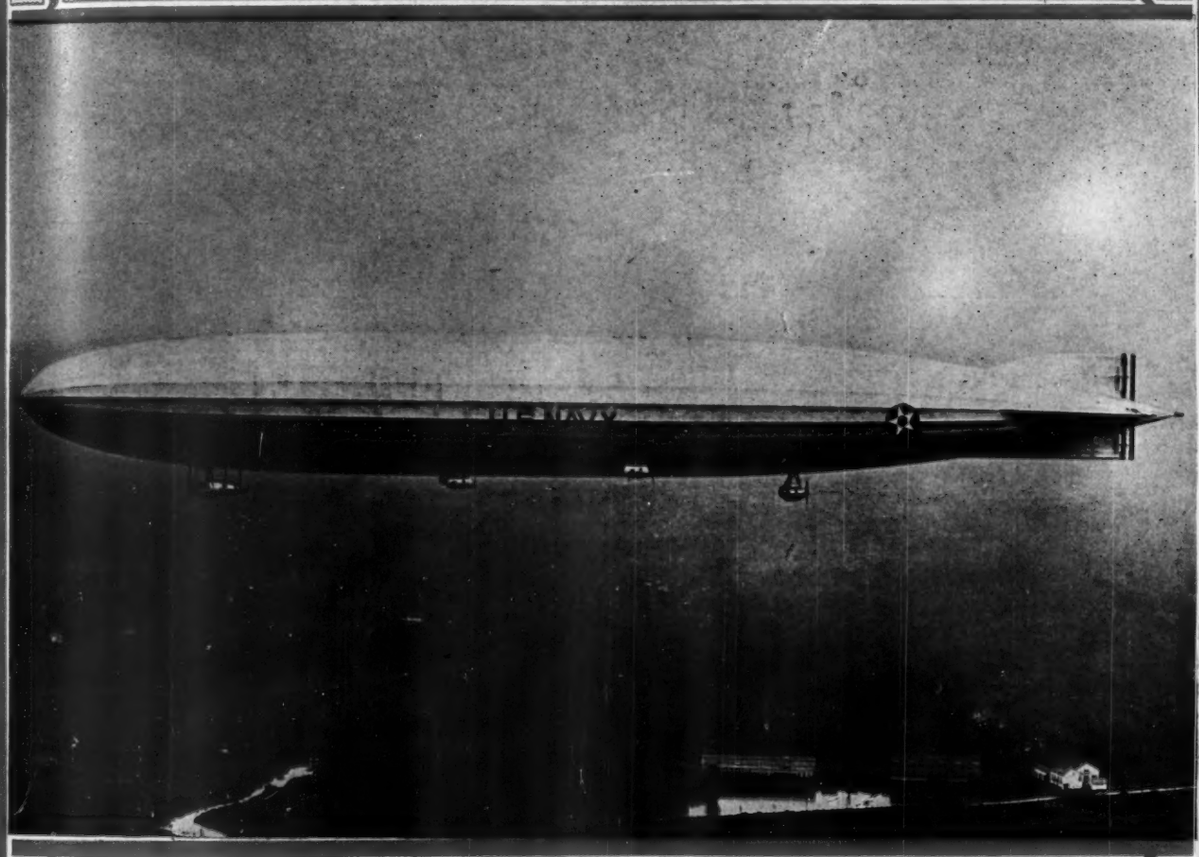
AVIATION

The Oldest American Aeronautical Magazine

SEPTEMBER 14, 1925 Issued Weekly PRICE 10 CENTS



The Shenandoah in flight

VOLUME XIX

NUMBER 11

SPECIAL FEATURES

HAWAII FLIGHT
THE BOEING MAIL PLANE
THE SHENANDOAH DISASTER
COLONEL MITCHELL ISSUES STATEMENT

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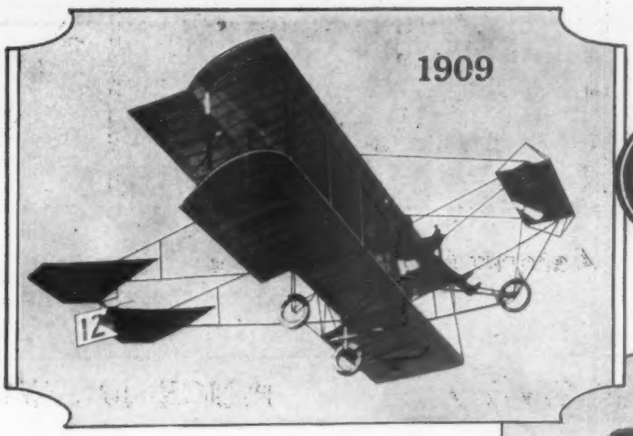

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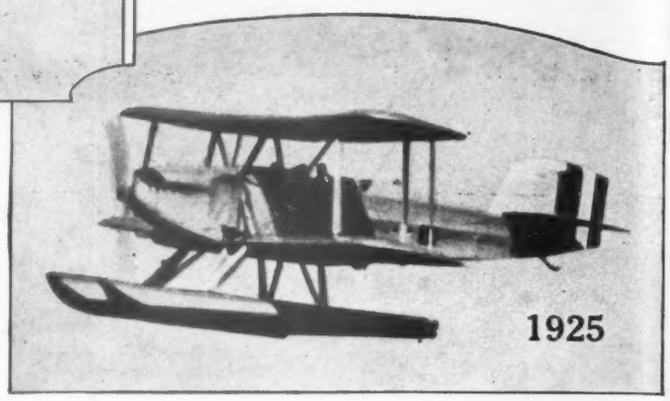

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SEPTEMBER 14, 1925

AVIATION

VOL. XIX. NO. 11

Published every Monday

CONTENTS

Editorials	309	The Boeing Mail Plane	321
A "Twister" Wrecks the Shenandoah	310	Airports and Airways	322
PN9 No. 1 Lost on West Coast-Hawaiian Flight	315	United States Air Forces	324
Col. Mitchell's Statements on Government Aviation	318	Publisher's News Letter	328

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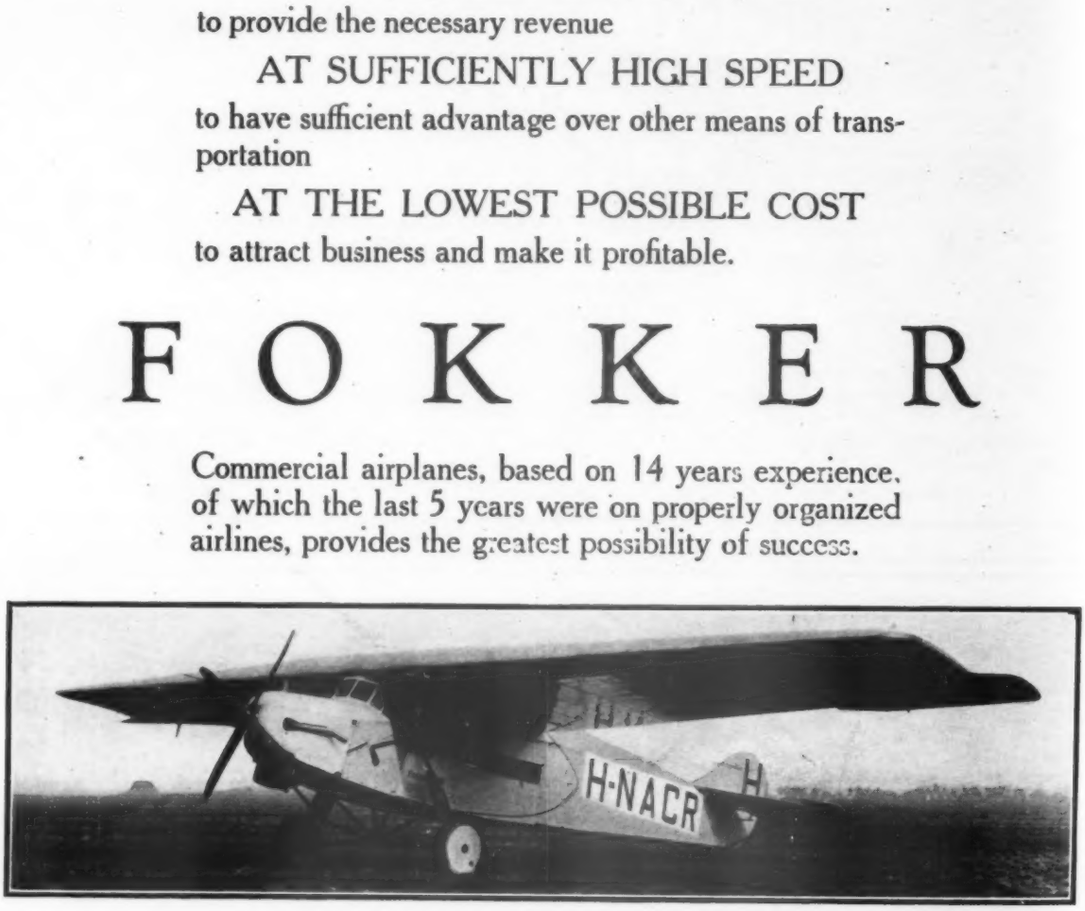

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VOL. XIX SEPTEMBER 14, 1925 No. 11

To the Aeronautical Roll of Honor

AMID the rapidly occurring aeronautical happenings of the first week of September there was no news that brought a sharper pang than that which added to the roll of honor of aeronautical heroes the names of Commander John Rogers, Commander Zachary Lansdowne and their seventeen Naval companions. Commander Rogers was in a true sense one of the country's aeronautical pioneers, having been one of the first of the Navy's officers to be detailed to study flying under the Wrights. Commander Lansdowne had the distinction of making the first trans-Atlantic flight in the R-34, of commanding the first airship that ever used helium and commanding the transcontinental flight of the Shenandoah, "the most extensive operations ever accomplished by an airship," to use his own words. He was undoubtedly the most experienced airship commander in our air forces.

The achievements of the officer personnel are well known, but those who have an intimate knowledge of the operation of all aircraft know that the officers are the first to give full credit to the enlisted personnel for the successful accomplishing of important missions. The men that made up the crews of the PN9 No. 1 and the Shenandoah were the most expert specialists in the Navy in their work. The loss of such crews is almost irreparable.

The sadness that has been in the hearts and minds of the aeronautical world will be borne with that courageous fortitude that comes from a knowledge that the last words of those who are sacrificed in the cause of air progress would be, if they could make them known, the ever present sentiment of all pioneers—"Carry on."

Take Aircraft out of Politics

BOARDS of experts will give their opinions as to the technical reasons that caused the loss of the Shenandoah and the PN9 No. 1, but no investigation will probably be made as to how much of those losses was due to the greatest danger to our air development—politics and propaganda. The political pressure that has been brought to bear on our air services for the use of government aircraft for propaganda purposes will, when it becomes known to the country and Congress, cause a revulsion of feeeling that will shift the enquiry from technical matters to what should be termed the real cause of some of the recent aeronautical accidents. The Army and Navy are publicity mad, and no risk is too great to take to spread propaganda that may have a favorable effect on appropriations. When these efforts miscarry, no time is lost to spread more propaganda that fits in with antiquated military and naval ideas.

The Secretary of the Navy, only a few hours after the airship had floated to the ground and before receiving any reports from a technical investigation, and when the whole country was horrified and mystified, used his statement concerning the wreck to spread propaganda for the old naval ideas. He is quoted as stating,

"In view of the experience of the Navy planes in the Arctic expedition, the failure of the Hawaiian flight and the Shenandoah disaster, we have come to the conclusion that the Atlantic and Pacific are still our best defenses. We have nothing to fear from enemy aircraft that is not on this continent."

When the last trip of the Shenandoah is considered from this viewpoint, the ultimate responsibility for this great loss to the Navy may perhaps be better understood. The trip was originally planned to bring out the crowds while President Coolidge was visiting Minnesota and create a favorable impression for the Navy and the Administration in the most doubtful section of the country, politically. When the Los Angeles failed to make the trip at a time of year that airship experts knew was dangerous, the Shenandoah was routed to cover the middle west and visit Detroit with the hope that Henry Ford could be persuaded to build an airship hangar at Dearborn to supplement his mooring tower.

It can be stated with direct knowledge, not hearsay, that Commander Lansdowne, who wanted to demonstrate the naval value of the Shenandoah with the fleet, the real purpose of the investment of over $15,000,000.00 of public funds in the Lakehurst projects, was so pressed by schedules made in Washington, to attend Governors' meetings in Maine, tow targets for anti-aircraft propaganda and make the Western propaganda trip that he was disheartened. If the files of the Navy Department are ever made public by a Congressional investigation, the political pressure exerted to have the Shenandoah visit various sections of the country will be known. And then it can be determined how much of its time the only airship that this country had that could be used for naval uses was being used for propaganda purposes, and how much with the fleet.

The West Coast—Hawaiian Flight was planned, as everyone in the service knows to offset the impression created by the Around the World Flight. With the need for increased appropriations, some outstanding achievement had to be planned before Congress met in December. Two seaplanes were built at the Naval Aircraft Factory and one by the Boeing Company. The desire to have the government built seaplanes get the credit of this longest non-stop flight over water caused the Navy to have only ship protection and not protection from the air that would come from having three planes flying together as was done in the Round the World flight. Certainly no one will believe that the delay of the few days required to replace the engines in the Boeing plane would have imperiled the success of the trip.

If the salvage that is secured as the result of an investigation of these experiences is the taking of aircraft out of politics, and stopping their uses for propaganda, those who are looking forward to the coming of commercial aviation will feel that at least one lesson has been learned. The Air Mail carries only the mail, and has won the respect of the whole world. It lets the Army and Navy do their experimenting in races, political flights, and appropriation propaganda.

A "Twister" Wrecks the Shenandoah

Broken in Three Sections but 28 of Crew of 42 Land Safely

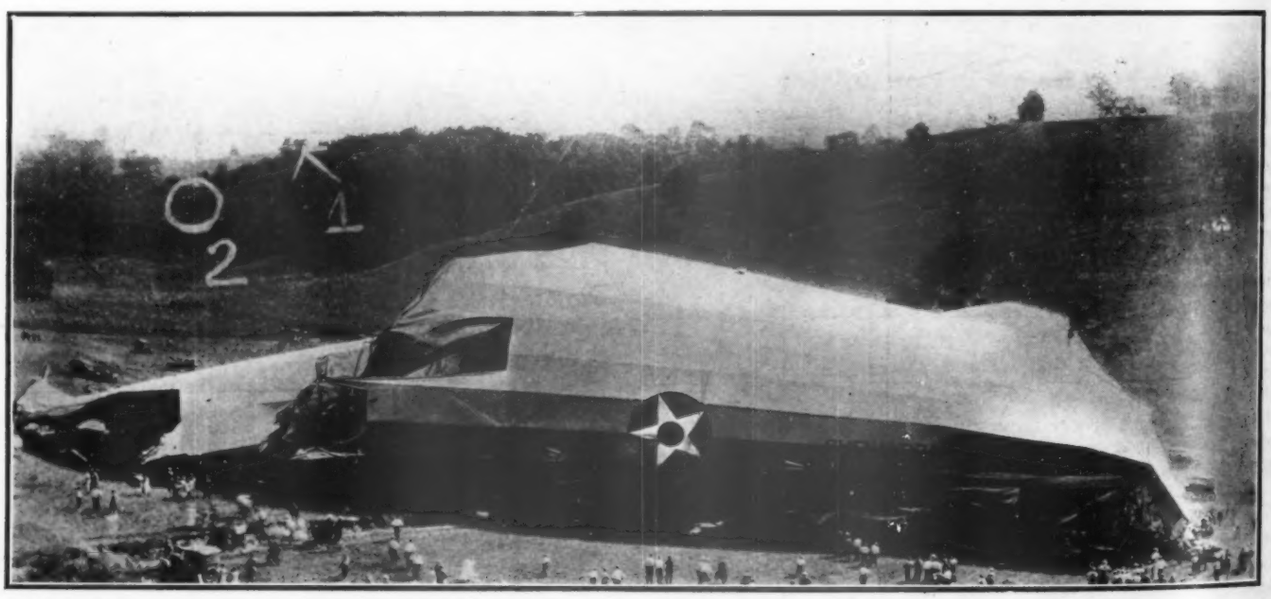
The Naval airship, Shenandoah met with an untimely end during the course of a protracted flight over mid-western states when, in the early morning hours of Sept. 3 she was wrecked in a severe storm, over the Ohio valley. The airship cast off from the mooring mast at Lakehurst at 4:02 p. m. on Sept. 2 and headed westward into a six-mile-an-hour breeze. Comdr. Zachary Landsdowne was in command of the airship which had on board a crew of 42 officers and men. The Shenandoah was scheduled to cover the route originally laid out for the Los Angeles several months ago but which was abandoned. The itinerary lay over Pittsburgh, Columbus and Indianapolis, with a stop to be made at Scott Field for refuelling, continuing the voyage over Kansas City, Des Moines, Milwaukee, Minneapolis and St. Paul, and returning via Detroit, a number of Michigan cities, Toledo, Sandusky, and Cleveland and thence back to Lakehurst.

The flight was progressing favorably and as night fell the ship was well out over Pennsylvania, having been reported passing Connellsville, Pa., at 11:40 p. m. Eastern Standard Time. She was last reported passing over Elm Grove four miles east of Wheeling, W. Va., at 1:45 a. m., and was heading due west showing three lights at a height of 1,000 ft. Later she was sighted over Cambridge, Ohio, when weather conditions were bad and there were thunder storms in the air. Nothing further is known of her proceedings until at appoximately 5:00 a. m. on Sept. 3 the airship was completely wrecked over Caldwell, Ohio, and the surrounding district. It is apparent that while riding out a wind and electric storm of unusual proportions the airship was forced into a line squall and twister which caused the complete fracture of her hull resulting in the ship being completely broken into three pieces. It is evident that upon leaving Lakehurst the day previous the Shenandoah was structurally considered to be in perfect condition and it can be accepted that in entering the regions of stormy weather there were no fears in the minds of the crew as to the abilities of the airship to successfully withstand and ride out any likely conditions, for the Shenandoah had had two years of hard service in many and varied kinds of weather.

It would appear that, with little warning, the airship was enveloped in a squall of great violence. She was flying probably at maximum speed and at an altitude of approximately 3000 ft. when, entering a vertical current, she was immediately forced up two or three thousand feet, which maneuver was rapidly followed by a descent quite as drastic. Then the airship was caught in the twister or circular current and began to spin horizontally. The strains were too great to be withstood by the frame of the craft and she broke, so eyewitnesses said, into three parts, the front nosing up and the rear section nosing down. The breaking of the frame pulled out the supports of the control and radio car and it fell two thousand feet with seven officers and crew. So far as the reliable accounts give details, the entire breaking up of the airship came simultaneously.

The two main breaks occurred a few feet in front of the forward power cars and again about 65 ft. behind the main break. The forward part, about 220 ft. in length immediately commenced to rise rapidly, shooting up at great velocity. At this moment the structural failures extended and the complete control car suspended below the fore part of the hull came completely adrift and with its full complement of watch officers and crew, including the Commander of the ship fell like a stone through space to be completely wrecked on striking the ground. Reports indicate that this second breakage was immediately followed by the detachment of one of the power cars from this portion of the hull. The whole forward portion continued to free balloon through space for a period of about one hour and covered about 12 mi., subsequently coming to the ground, carrying seven of the ship's crew.

The midsection crashed and crumbled up completely land-



Wide World Photos

THE LEFT SIDE OF THE REAR SECTION OF THE SHENANDOAH WHICH FELL NEAR AVA. This view was taken toward the direction from which the airship descended. The circle (2), in the clump of trees, indicates where one of the forward engine cars fell. The arrow (1) points to the spot on the top of a hill where the control and radio car fell when it became detached from the forward section. Nearby, the center section fell leaving only a twisted mass of metal. This picture shows the rear section after it had been looted by the curious. The rear engine car became detached and was found at a distance. Another power car was also wrenched free. This section contained ten gas cells of the twenty that lifted the Shenandoah, one of which can be seen to be still inflated under the insignia.

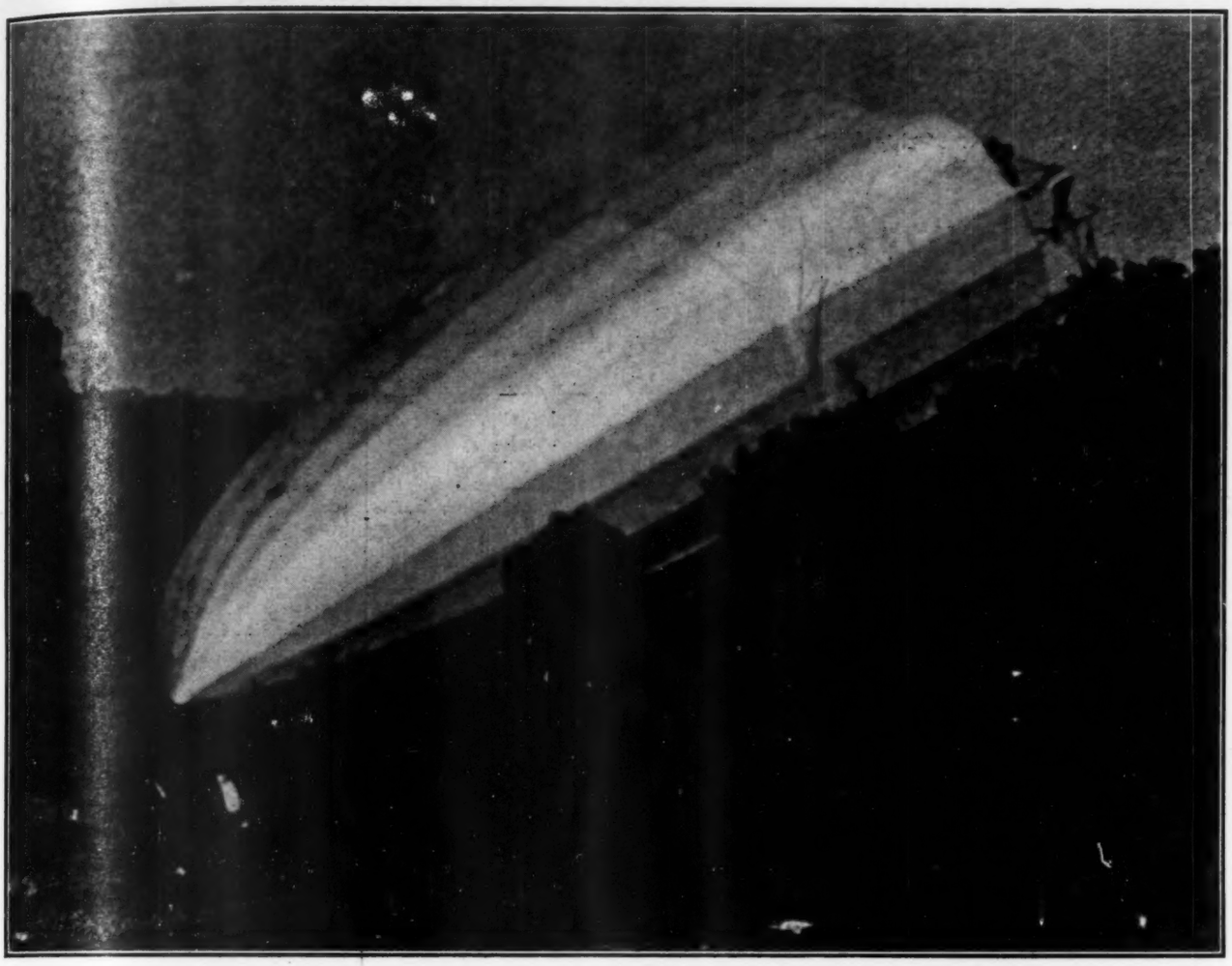


Photo by Fox News from P. & A. Photos

THE FORWARD SECTION. . This section, after the control and radio car fell, broke at frame 130, about 220 ft. from the nose. There were six of the gas cells in this section which enabled it to drift as a free balloon with seven of the crew, including Col. Chalmers Hall of the Air Service.

ing near the control car. It, however, landed three occupants safely, only one being slightly injured. The after section itself rolled down the hill over a corn field and eventually came to rest in the valley beneath, precipitating seventeen members of the crew, who had been fortunate enough to manage to cling on during the fall. This portion of the wreckage, being still partially filled with gas, settled to the ground gently, thereby saving the lives of these members of the crew. In its passage over the surrounding trees before finally coming to rest, the rear power car was completely and wholly swept away from the keel of the hull and was found in a practically undamaged condition nearby to the major wreckage of the rear part of the airship. Since the propeller of this power car was unbroken, it would appear certain that this engine, at least, was not running at the time of the fall, it being presumably either purposely stopped at the moment of the accident or put out of action by the detachment of the gasoline lines as a result of the major fractures.

The control car crashed to the ground about a mile away from where the wreckage of the rear section came to rest and at a spot between these two, one of the power cars, which fell away in the air, crashed and, like the control car, was rendered a complete wreck. There was no fire or explosion whatsoever during the accident and the complete absence of this must be put down very largely to the use of helium gas in place of hydrogen in the hull of this airship.

In regard to the cause of the accident and what actually happened, the log of the flight together with the barographic record for that part of the flight immediately preceding the accident, supply the most reliable information. The following is an extract of that part of the log pertaining to this last flight of the Shenandoah:—

"3:30 p. m., Wednesday, Sept. 2, 1925—Shenandoah radio system given final test and found to be O.K.

"3:40—Buoyancy of ship tested and additional members of crew added to take up ballast space.

"3:50—Officer in charge of supplies and equipment reports that everything is in readiness.

"3:55—Commander Lansdowne boards ship and orders get-away preparations.

"3:58—Final test of ship and O.K. stamp of approval given all departments.

"4:02—Ship released from mooring mast and glides into the air, and, as motors are turned on, are found to be working smoothly and ship starts westward cruise."

The log continues its disconnected account of the trip:

"Passing high over Philadelphia saw lanes of lights in streets below, beautiful afternoon, everything running smoothly, crossed Delaware River at height of 6000 ft. Boats greet us with whistles, as also did manufacturing plants, etc.

"6:30 p. m.—Received radio from Ford Motor Co. at Detroit, Mich., calling in on 1913 meter every hour until further notice, wave 952 meter length. Visibility dim. Gathering speed, altitude 5800 ft.

"7:50—See Laurel Mountains ahead and gain height to cross them; beautiful country below, lanes of automobiles

Photo by Pacific & Atlantic

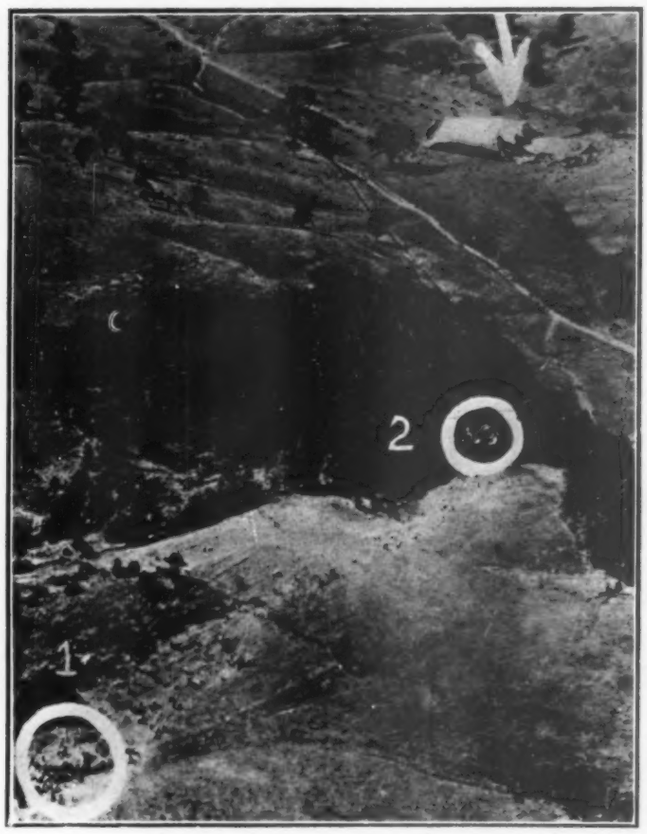
THE OFFICERS AND CREW OF THE SHENANDOAH

seen on the country roads, and as dusk falls lights may be seen for great distances on the mountain lanes.

"9:30 p. m.—Receive baseball scores of afternoon games, news of the world from Europe and various points in North America. News is flashed to members of the crew.

"Chambersburg below looks like a picture under a Christmas tree, and we think of the kiddies at home and wonder if they are all asleep. Throw kisses to Tom and Billy from the ship in the air.

"Deep valley and high mountains greet us, but as long as we stay up we should worry about what is below us. See lightning to the south of us, but the sky is clear and we can view the earth below without trouble.



Times Wide World Photo

WHERE THE REAR SECTIONS LANDED. Circle 1 shows where the control and radio car and the center sections fell. Circle 2 indicates the spot where one of the engine cars was found. The trees were those brushed by the rear section as it floated down the valley. The arrow points to the crumpled rear section

"Crossing Pennsylvania and its beautiful farms but we cannot see their beauty owing to the darkness, but hope for better things tomorrow, when we can see the earth.

"Strike national highway lane near Uniontown and our bearings show that we are an hour in advance of proposed schedule. Everything working fine. Radio gathers concerts from Pittsburgh and Cleveland, which are enjoyed by the crew.

"1:15 a. m.—Pass over Washington, Pa., and come down a little owing to the lowering hills and mountains and find darkness is increasing. Take bearings and find that we are in direct line for Wheeling, where we have orders to drop and circle city if weather permits.

"1:35 a. m.—Get glimpse of lights from Wheeling Steel Mills in the distance and pick our course across center of city as we drop and decide that circling is not practical, owing to dense visibility.

"1:55 a. m. (standard time)—Pass over Wheeling and cross Ohio River, being greeted with whistles and bells as we cross city and view red flares set off on top high hill. We return honors by lighting up the ship from stem to stern.

"2:10 a. m.—Follow valley westward through Ohio and see lightning flashes directly ahead. Take higher elevation and find that visibility is bad.

"2:30 a. m.—Strike strong head winds and see storms both northwest and southwest in distance. Believe that we can ride them without trouble and bear straight westward.

"3:15 a. m.—Storm increasing in intensity and ship pitches heavily. Pass over Lore City, Ohio, and steer toward Cambridge, northwest to avoid storm direct ahead.

"3:50 a. m.—See Cambridge in distance and make little headway as result of strong head winds. Storm worst we have encountered to date.

"4:20 a. m.—Pass over Byesville, Ohio, after battling storm over half hour and decide to steer south to get out of direct wind. Trouble with radio, will not pick up messages—effort to repair it unsuccessful.

"4:55 a. m.—Members of crew called from gondola pit and sent into runway to aid in keeping ship on even keel. Commander orders care in changing course. All engines working perfectly, uable to gain headway in wind. Lightning increasing in intensity. Hope to ride out storm soon. Unable to get radio to function.

"Pleasant city seen in distance, observations taken; off course thirty miles south.

"Order to throw off gasoline tanks given and complied with, but does not aid stability. Radio no better, wind increasing in volume, get chance to"—

The sentence was never completed.

The barograph, which was salvaged, gives a further insight into what actually happened. A thin, blue line on the

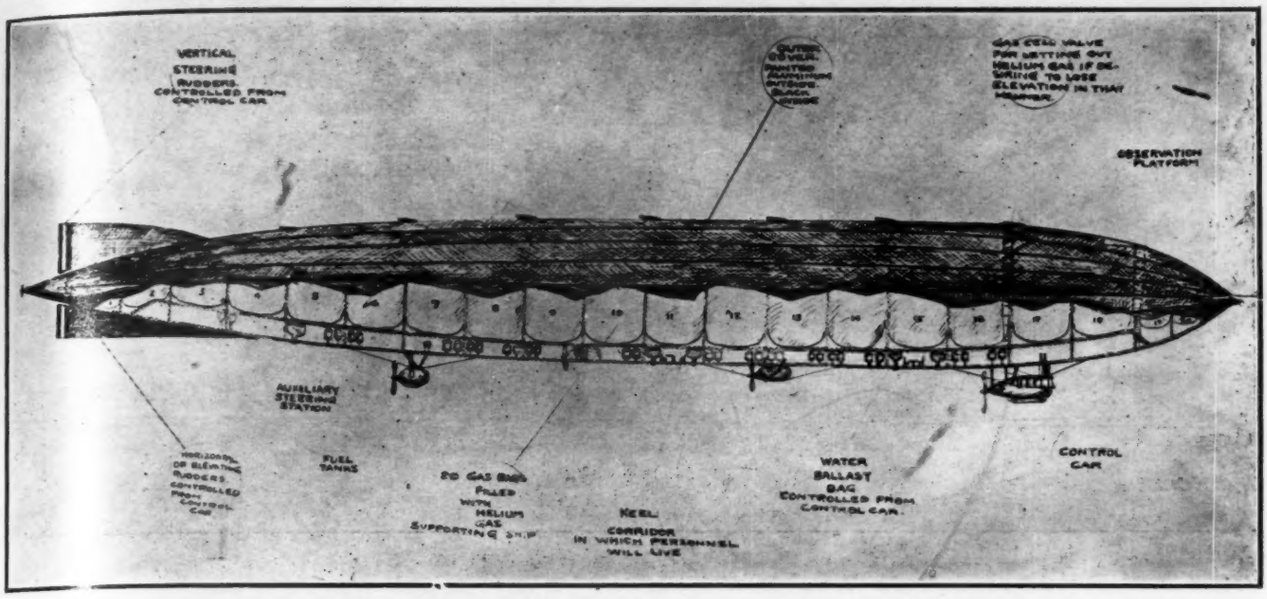

VERTICAL STEERING RUDDERS CONTROLLED FROM CONTROL CAR
OUTER COVER PAINTED ALUMINUM INTERNAL GAS CELLS
GAS CELL VALVE FOR LETTING OUT HELIUM GAS IF DESIRING TO LOSE ELEVATION IN THAT
OBSERVATION PLATFORM
AUXILIARY STEERING STATION
FUEL TANKS
20 GAS CELLS FILLED WITH HELIUM GAS SUPPORTING SHIP
KEEL CORRIDOR IN WHICH PERSONNEL WILL LIVE
WATER BALLAST BAG CONTROLLED FROM CONTROL CAR.
CONTROL CAR

DIAGRAM OF SHENANDOAH. This drawing shows the interior cell locations, twenty in all. The two middle engine cars, which were located higher than the keel, are indicated by a dotted propeller under gas cell 9. The forward section broke at gas cell 14, and the rear section broke at gas cell 10.

barographic chart, which was the third one used after the ship left Lakehurst, shows the Shenandoah's even trail through Eastern Ohio. It shows a little "weather" somewhere between Wheeling, W. Va., and Cambridge, Ohio.

According to time calculations, the squall was encountered while the ship was approaching Cambridge at about 4 a. m. A sudden change of atmospheric conditions is shown. The temperature fell from 72 deg. to 60. The blue line shows that the ship rose first to a height of 1500 ft. For a time it remained at this elevation. Again it shot upward. This time it reached about 2400 ft. Then the ship dropped a little nearer the earth.

The movements of the recording pin at this point were very violent. They show that the ship shot upward and to a height of about 6000 ft. It held there for a second or two and then plunged down so rapidly that the pin did not even register on the sheet. This presumably marks the moment at which the control car became detached from the hull, and fell to earth. At several spots the pin dug into the graph paper and its record ended with a scattering of blots and scratches near the bottom edge of the sheet. The scratches and blots tell the story of the crash of the control car. The speed of the fall was too great for the instrument to record.

It would seem that the Shenandoah was caught in a severe storm of the 'line squall' type, the presence of which she had not been warned of previously. It is known that such a storm is characterized by very violent vertical currents of considerable speed and the presence of these could be re-

BIOGRAPHIES OF SOME OF THE LOST OFFICERS

Lt. Comdr. Zachary Lansdowne

LANSDOWNE, ZACHARY, Lt. Comdr., U. S. N.; born, Greenville, Ohio, Dec. 1, 1888; son of James Moreton Lansdowne and Elizabeth (Knox) Lansdowne; married, Margaret Ross, Dec. 7, 1921.

Educated: U. S. Naval Academy, 1909.

Professional: Two years sea service as midshipman on battleship U.S.S. Virginia; four years sea service, torpedo boat destroyer, U.S.S. McCall.

War Service: Ordered to U.S.N.A.S., Pensacola, Dec. 1916; ordered to England, Aug. 1917; service at British Air Stations during war; R.N.A.S. Cranwell, R.N.A.S. Polgate, R.N.A.S. Pulham, R.N.A.S. Howden, until March 1918; March 1918 to Sept. 1918, duty Office of Naval Operations, (Aviation) Navy Department Washington, D. C.; ordered to France and commanded U.S.N.A.S., Guipavas, France; duty Paris Headquarters, March to May 1919 following Armistice; made flight fram East Fortune, Scotland to Mineola, L. I., U. S. A. in July 1919 on airship R-34; First westward and first transatlantic flight; Commanding U. S. Naval Air Station, Akron, O. Oct. 1919 to Feb 1920; Duty in Office Chief of Naval Operations and Bureau of Aeronautics Feb. 1920 Feb. 1922; In charge of Naval airship C7, December 1-5, 1921, during first airship flights ever made using helium as a lifting medium; Duty, Assistant Naval Attache, Berlin, March 1922 to Oct. 1923, special duty in connection with contract for the Zeppelin ZR3; Selected to command the U.S.S. Shenandoah Feb., 1924 for the proposed Navy Artic Expedition; While commanding the U. S. S. Shenandoah on 8 August 1924 accomplished first airship mooring to mast on surface vessel, U. S. S. Patoka, in Narranganset Bay; Commanded U. S. S. Shenandoah on West Coast Cruise, distance of 9,317 miles, 19 days, 19 hours duration, crossed mountains, deserts, plains and sea from the Atlantic to the Pacific and from Canada to Mexico, cruise represents far the most extensive operations ever accomplished by an airship.

War Honors: Navy Cross (U. S.); Air Force Cross (British).

LT. COMDR. ZACHARY LANSDOWNE

Lieut. Comdr. L. Hancock, jr.

HANCOCK, L., Jr., Lieutenant Commander; born, Austin, Tex., Oct. 15, 1889.

Graduated, U. S. Naval Academy, June 5, 1910.

Entered submarine service April 1912; commanded submarine C-2 on voyage to Cuba and Panama in summer of 1912, first long oversea voyage of US Submarines.

Commanded Submarine L-4 on anti-submarine patrol in English and Irish waters during 1917 and 1918, based on Bantry Bay, Ireland; commissioned Lieut. Commander, July 1918.

Received Navy Cross.

Engineer Officer, Destroyer Flotilla 2, Battle Fleet, from Dec. 1920 to Nov. 1921.

On duty Naval Air Station, Lakehurst, N. J. in connection with Rigid Airships from May 1923.

Lieut. John B. Lawrence

LAWRENCE, JOHN B., Lieutenant; born, St. Paul, Minn., March 15, 1891.

Attended University of Minnesota, Class 1913.

Entered Naval Service April 13, 1917; detailed to aviation training school at Pensacola, Fla. from April to June 1917 and at the Naval Airship School, Akron, Ohio from June to January 1918; qualified as airship pilot in December 1917; commissioned ensign January 1918; in charge of lighter-than-air division of Naval Air Station, Key West, Fla. from March 1918 to Nov. engaged in student training and airship patrol of the Straits of Florida.

In charge of Lighter-than-air Division of Naval Air Station, Hampton Roads, Va. from November 1918 to March 1920.

Pilot of Airship C1 on flight from New York to Key West, Fla. in Jan. 1919.

Commissioned Lieutenant April 1919; pilot of airship C-5 on flight from Montauk, L. I. to St. Johns, Newfoundland in May 1919.

Member of U.S. Naval Rigid Airship Detachment, Howden, England from March 1920 to Oct. 1921, training in Rigid Airships and forming crew of airship ZR-2 (R-38); in command of Kite Balloon Squadron No. 1, Air Squadrons, Scouting Fleet, from Jan. 1922 to Jan. 1923.

On lighter-than-air duty in Bureau of Aeronautics from March 1923 to March 1924.

Attached to USS Shenandoah, March 1924.

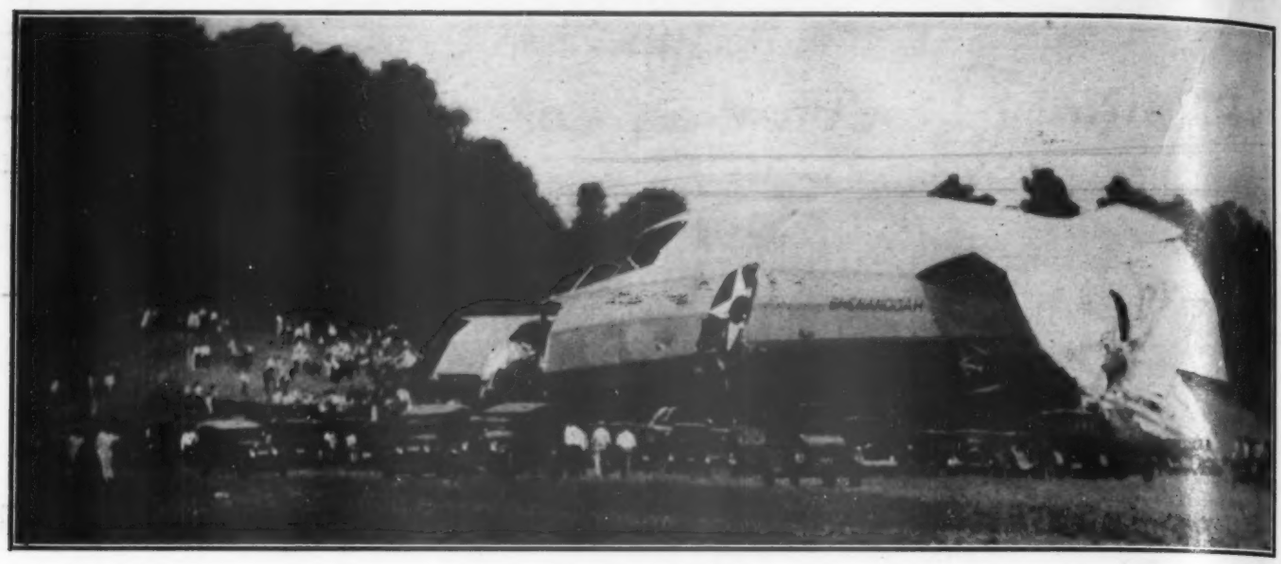


Photo International

THE REAR OF THE WRECK. This section was almost intact before the looters tore the covering fabric, gas cells and even the frames apart. Eyewitnesses report that the forward part of this section crumpled when the frame was wrenched by souvenir seekers. The effect of the twister on the horizontal and vertical steering rudders can be seen from this view

sponsible for the very rapid increase in altitude of the airship as recorded by the barograph. Such violent motions imposed upon the airship would undoubtedly set up very severe stresses in the ship's hull structure and could, if the structure were not strong enough to withstand such forces, cause a complete failure of the girders, which would result in just what actually did happen to the Shenandoah. Furthermore, a rise in altitude of the order of 3000 ft., which, from the barographic record, appeared to take place, would necessitate the escape of a very considerable amount of gas from the bags within a very short space of time.

Lieutenant Commander Rosendahl, the ranking Naval officer after the wreck, gave the following account of the wreck:

"I went on duty at 3:30 a. m. to relieve Lieut. Comdr. L. Hancock, who was navigating the ship. We were on a line headed west between Byesville and Cambridge. Weather conditions were bad. There was lightning and squalls. Although we had all engines going, we could make no ground speed. The storm crept upon us from the northwest. We tried to turn south. Then the line squall hit us. It lifted us from an altitude of 2,500 to 4,500 ft., where we righted the ship for a few minutes, only to be taken up again for an altitude of 7,000 ft.

"The vertical air current was so strong that it carried the ship heavenward in spite of an 18 deg. inclination of the nose of the ship.

"We released helium through the hand valve, expecting this to check the ascension. We had dropped overboard all water and I had started from the control of the ship to the keel in an effort to throw overboard fuel.

Hears Fatal Crash

"At this moment there was a crash. I heard the struts breaking and saw the nose of the ship parting from the control compartment. A second later I heard another crash, which must have been the control ship hitting the ground. It was in this compartment that Commander Lansdowne and the others were killed.

"The nose of the ship started across country at about 25 m.p.h. speed, brushing trees and a house or a barn. We handled the nose as if it were a free balloon and landed safely at Sharon, twelve miles from the place where the control ship dropped.

"McCarthy was forward in the nose and was injured when he was knocked overboard.

"Those with me in the nose of the ship were Col. C. G. Hall, United States Army observer; Lieut. W. G. Mayer, Lieut. J. B. Anderson, Chief Machinist's Mate Halliburton, Chief Machinist's Mate Shevotiv and J. F. McCarthy, aviation chief rigger."

The following is a list of the dead in the Shenandoah disaster:—

Commander Zachary Lansdowne, Greenville, Ohio.

Lieutenant Commander Louis Hancock, Austin, Tex., executive officer.

Lieutenant J. B. Lawrence, St. Paul, Minn., watch officer.

Lieutenant E. W. Sheppard, Washington, D. C., engineer officer.

Lieutenant A. R. Houghton, Allston, Mass., watch officer.

George C. Schnitzer, Tuckerton, N. J., chief radio man.

James A. Moore, Jr., Savannah, Ga., aviation machinist's mate, first class.

Everett P. Allen, Omaha, Neb., aviation chief rigger.

Ralph T. Joffray, St. Louis, Mo., aviation rigger.

Bartholomew B. O'Sullivan, Lowell, Mass., aviation machinist's mate, first class.

William H. Spratley, Venice, Ill., machinist's mate, first class.

Charles H. Broom, Toms River, N. J., aviation machinist's mate, first class.

Celestino P. Mazzuco, Murray Hill, N. J., aviation machinist's mate.

James W. Cullinan, Binghamton, N. Y., aviation pilot.

Seriously injured:—

John F. McCarthy, Freehold, N. J., aviation chief rigger, Gunner Cole.

Members of the personnel, described as unharmed or without serious injury are:

Officers: Lt. Comdr. Charles S. Rosendahl, Cleburne, Tex.; Lt. Roland G. Mayer, Seattle, Wash.; Shine S. Halliburton, chief machinist, Macon, Ga.; Lt. T. C. Hendley, Columbia, Tenn.; Lt. C. E. Bauch, Dorchester, Mass.; Raymond Cole, chief gunner, Lima, Ohio; Lt. J. B. Anderson, Hyattsville, Md., aerological officer; Col. Chalmers Hall, U.S.A., observer.

Enlisted men: Louis E. Allely, Logan, Ohio; Henry L. Boswell, Bagdad, Fla.; Arthur E. Carlson, Moscow, Idaho; James H. Collier, Lakewood, N. J.; John J. Hahn, Philadelphia; Benjamin O. Hereth, Clatonia, Neb.; Walter Johnson, Minneapolis; Ralph Jones, Los Angeles; Julius E. Malak, Hooversville, Pa.; Frank L. Peckham, Frontstone, Md.; August C. Quernheim, Lakehurst, N. J.; William A. Russell, Brooklyn, N. Y.; Joseph Shevlowitz, Brooklyn, N. Y.; Charles Solar, Indianapolis; Frederick J. Tobin, Arlington, Mass.; Richardson Wilson, Yakima, Wash., seaman second class.

Lester Knox Coleman, aviation chief machinist's mate, Fort Worth, Tex.; Mark Jones Donovan, chief boatswain's mate, Philadelphia; W. W. Richardson, chief Navy photographer, Washington, D. C.

PN9 No. 1 Lost on West Coast-Hawaiian Flight

Commander Rodgers and Crew of Four Disappear after Flying 1600 Miles

Tragedy has overtaken the proposed flight of the United States Navy seaplanes when, on Aug. 31, two PN9 twin engined flying boats took off from San Francisco Bay and spread their wings westward across the vast Pacific Ocean on a flight of 2030 mi. to the Island of Maui in the Hawaiian group. Ten patrol ships were spaced at distances at two hundred miles along the course across the ocean. These ships consisted of destroyers, with the exception of the Langley and the Aroostook, these latter being aircraft ships the Aroostook, an aircraft tender and the Langley, an airplane carrier ship.

The Start

On the afternoon of Aug. 31 the Boeing seaplane PB1 having developed trouble in the oil pipe system and consequently being unable to start, the PN9 No. 3 sped swiftly across the waters of San Pablo Bay at an officially recorded time of 2.41:2⅕ p. m., the plane of the flight commander, PN9 No. 1 following closely at 2.55:8 4/5 p. m. Both made perfect take-offs and climbed rapidly into a clear sky.

Watchers on San Pablo saw a silver speck start down from Midshipmen's Point, grow into the semblance of a flying boat, leave the water smartly and cleanly and come roaring overhead. The flight to Hawaii was on.

The mother ship Gannet was anchored in San Pablo Bay for the start of the flight. Aboard her were Rear Admiral William A. Moffett, chief of the Bureau of Aeronautics of the Navy, and Capt. Stanford E. Moses, commander of the Aircraft Squadrons of the Battle Fleet, who has been designated by the Navy Department as commander of the Hawaii flight project.

The take-off was unusual in that there were no cheering thousands to wish the fliers godspeed on their journey. Eagle boats, submarine chasers and Coast Guard cutters carefully patrolled San Pablo Bay to make sure that no boats were present to interfere with the long straightaway dash that the giant seaplanes must make upon the surface before they attain sufficient speed to rise in the air.

Army planes from Crissy Field dipped and circled about the giant Navy seaplanes before the flight began. When the big Navy planes rose into the air the Army planes fell in line behind them and acted as an escort until they were safely out to sea.

The official weather report, rushed to the fliers just before the great engines started whirring, reassured them with the message:

"There is no fog, and the lowest clouds are 1,500 ft. up. There are light northwest and north winds to 300 mi. out. At 450 mi. out you are on the edge of the trades and at 500 you are well in the trades. Advise you to fly at altitudes of from 1,000 to 2,000 ft."

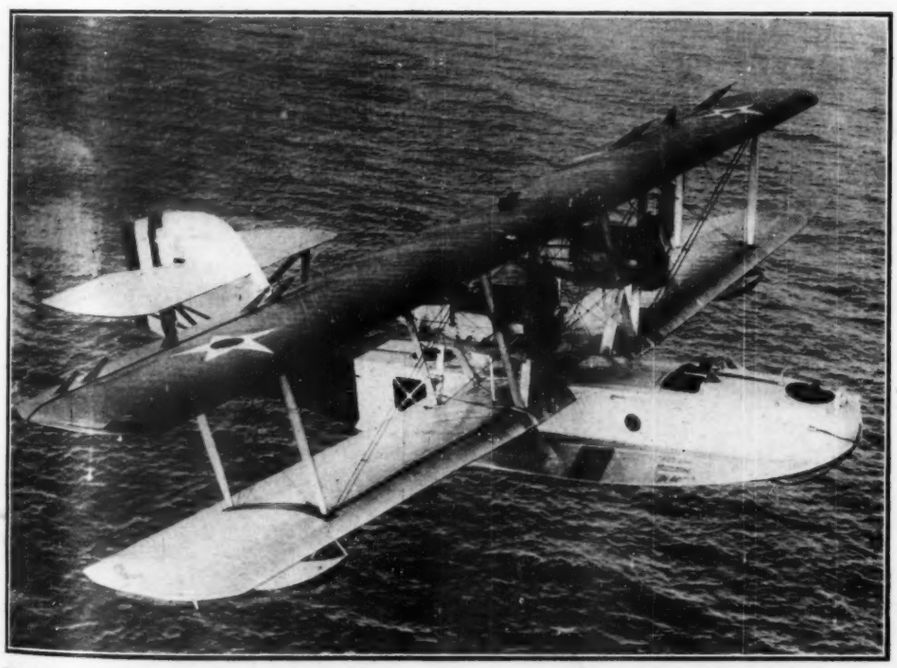
An hour after leaving the water the planes were flying easily, at a height above 500 ft. and had established radio communication with shore stations. At 5 o'clock they were in communication with the William Jones. The planes were then checking on their bearings.

Weather Favorable

The United States Weather Bureau issued a forecast of favorable weather for the fliers for the whole duration of the flight. "While a disturbance of considerable intensity is developing near Dutch Harbor, Unalaska, it is not expected to sweep southward, and the gentle head winds, so much desired by seaplanes, are expected to prevail," the report stated.

"The sky will be overcast for most of the route," the Weather Bureau reported, "but the winds will hold from ten miles an hour off the coast to twenty miles in the area of the finishing point. The prevailing wind directions will be north and east."

At 5:40 p. m. the seaplane PN9 No. 1 passed the destroyer



The PN9 No. 1 in flight. This seaplane was designed and built at the Naval Aircraft Factory. It held the world's record for endurance over water

Photo International

William Jones, the first guardship, 200 nautical mi. southwest of San Francisco.

The original message from the William Jones made mention of only the PN9 No. 1, but a message received a little later said that both of the aircraft had been seen.

The two seaplanes were flying seven miles apart, one being to the right and the other to the left of the station.

The planes passed out of sight of the William Jones at 6:15 p. m., being lost in the haze to the south and west. They were flying at an elevation of about 700 ft.

Just 18 min. after the planes disappeared from the sight of the William Jones, the aircraft got in touch with the McCawley by radio and obtained compass bearings. The message conveying this information was the first received here from the McCawley, stationed 400 mi. from San Francisco.

400 Mile Ship Passed

The PN9 No. 1 passed the destroyer McCawley, 400 mi. out, at 8:40 p. m. A report from the PN9 No. 3 was expected momentarily from the McCawley.

Comdr. John Rodgers, flight unit commander, sent a wireless message to the destroyer McCawley which said:

"Everybody feeling fine and we are O.K."

Comdr. John Rodgers had with him in the flag plane of the flight Lieut. B. J. Connell as second pilot of that plane and navigation officer for the entire expedition. Lieutenant Connell, one of the Navy's finest masters of navigation, was an expert with the earth-inductor compass, an instrument which utilizes the earth's magnetism to keep it on its course. A galvanometer mounted in the navigating cockpit takes readings of the variation created by a constantly excited electromagnet coming into conflict with the normal lines of magnetic force about the earth as the plane veers from port to starboard.

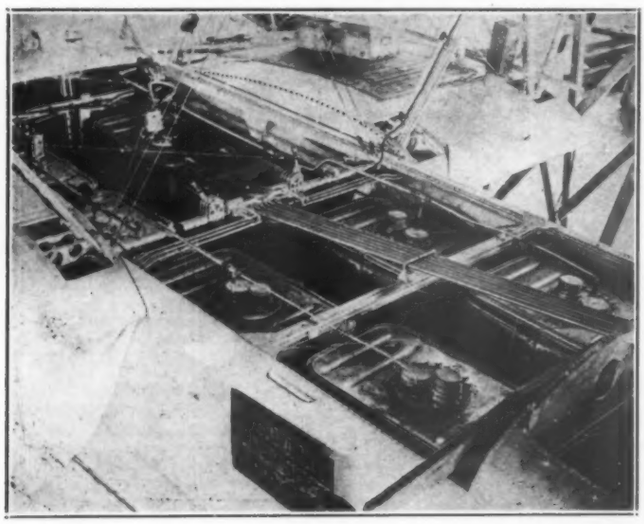


Photo International

The fuel tanks and control system of a PN9

With the destroyer McCawley awaiting anxiously the arrival of the PN9 No. 3 following closely upon the heels of its sister ship the PN9 No. 1, news came through by radio to the effect that trouble with the power plant had forced Lieut. Allan Snody, in command of the seaplane No. 3, to alight on the water at a spot between the first two patrol ships and some 300 mi. off the coast of California. The mine-layer Gannett was immediately sent out to the rescue and suceeded in towing the crippled seaplane back to the Golden Gate. Broken lubricating oil leads were found to be the cause of this enforced retirement so early in the course of the expedition but the plane was successfully salvaged and repairs immediately put in hand.

The progress of the PN9 No. 1 in its continued flight across the Pacific was uneventful and up to schedule until all news of her whereabouts ceased shortly after she had reported passing the destroyer Farragut, the third patrol ship out from the terminal end of the flight. The progress of the flight may be traced through from the radio reports received from station ships along the route. Leaving San Francisco at 2:46 p. m. on the afternoon of Aug. 31, the flag plane passed the first patrol ship, the William Jones, stationed 200 mi. out from the coast, at 5:50 p. m. The second patrol ship, McCawley, 400 mi. out, was passed at 8:50 p. m. Continuing to the third patrol ship the Meyer and passing this at 11:55 p. m. the PN9 No. 1 had then covered 600 mi. of the flight. No reports were received as to when the plane passed over the destroyer Corry marking the 800 mi. point but the Doren was passed at 4:45 a. m. on Sept. 1 thus marking almost the half way point in the flight. The average speed of the seaplane between ships which up to this point had been approximately 66 m.p.h., had by this time increased to an approximate 80 m.p.h., maintaining this average speed until the seaplane carrier Langley was reached at 7:10 a. m. having then covered 1200 mi. The Reno, the seventh patrol ship stationed at a distance of 1400 mi. from the American coast was passed at 10:27 a. m. and the last reports from Commander Rodgers were received as the PN9 No. 1 passed over the destroyer Farragut at 1 p. m. having thus covered 1600 mi. of the flight and having then but 420 mi. further to go.

1600 Miles Flown

The Farragut is the third patrol ship out from the island of Maui, and is located 420 mi. from Kahului, on the northern coast of the island of Maui. There are two other patrol ships between the Farragut and Kahului. They are the Tanager, 70 mi. out, and the Aroostock, 150 mi. further out.

From 1 p. m. on no further news of the flag plane was heard and a distress signal was sent broadcast across the vast ocean. The weather was bad, the wind which had been against the aviators was high, and the sea rough.

This gloomy view of the predicament of Comdr. John Rodgers, U.S.N., and his four co-aviators, was based on official reports received from ships in the path of the big seaplane, PN9 No. 1. The reports all yielded the same definite fact, that the aviators were lost, untraceable in the darkness.

Throughout the hours of darkness, however, plans for rescue of the aviators, should they be found and alive, were brought to completion. The island of Maui, nearest of the Hawaiian group to the point the PN plane was believed to have dropped into the Pacific, was designated as the rescue base. Airplanes, submarines and surface ships were ordered to start at daybreak on a systematic search of the territory between the twenty-first and twenty-third parallels of latitude and the 153d and 155th meridians of longitude.

Search Started

At the first indication of dawn airplane and surface craft nosed out into the Pacific ready to search for the missing seaplane.

Rising winds had retarded the speed of the seaplane and forced extravagance of the carefully guarded gasoline supply. Shortly after noon Commander Rodgers reported by radio that his fuel was running low. Two hours more and after a number of messages saying it would be forced to alight, the seaplane's radio was silenced.

By that time rain was falling steadily in the vicinity of the seaplane. Visibility was bad. The ships which started out to rescue the stranded aviators found themselves hampered by the encroaching night and lack of definite bearing showing the location of the lost plane.

With the destroyer Farragut, the Aroostook spent the night moving in the area 300 mi. off Honolulu, stabbing the seas in the vicinity where the missing plane might have dropped disabled.

A message received from the missing plane after the craft radioed that it was trying to remain in the air until the dwindling gasoline supply was exhausted, said:—

"What is wrong, please? Go ahead!" meaning that the Aroostook should proceed furnishing compass bearings to the PN9 No. 1. To this query, the Aroostook answered:—

"What is your course and are you trying to find us?" To this message there was no answer.

With squalls brewing over an already storm tossed sea,

fear was felt that the PN9 No. 1, flag ship of the San Francisco-Hawaiian flight, with her crew of five men aboard, had been battered to pieces by heavy waves. Comdr. Wilbur R. Van Auken, of the plane tender Aroostook, which, with the mine sweeper Tanager and the destroyer Farragut, was leading the search, reported shortly after midnight that the sky was overcast, the weather rainy and squalls brewing. The vessels were circling about, using searchlights to aid in the hunt for the missing plane. It was estimated at that time that the PN9 No. 1, was probably drifting at about 8 m.p.h.

Meantime a squadron of about a dozen submarines, which had been cruising in the vicinity of Pearl Harbor, swung into a fan-shaped formation and proceeded back over the course which the missing plane was taking when forced down. In addition to the submarines, three other planes from Pearl Harbor took up the search. Three warships from the line of flight guard west of the Island of Maui joined in the search but by an early hour on Sept. 2 still no news of the unfortunate airmen and their plane was forthcoming.

The last messages received from the seaplane were not calculated to inspire much confidence that she would be able to reach the shelter of the Island of Maui, the nearest landing.

"We will crack up if we have to land in this rough weather with no motor power," read one message from the plane to the Aroostook, which then was on station 1800 mi. from the California coast and less than 300 mi. from Honolulu, the intended destination of the flight.

Another message asked: "Are you in the rain " The Aroostook replied affirmatively.

Last Messages

The first message of actual distress was transmitted at 1:18 p. m. when the seaplane commander, John Rodgers, broadcast the following to all Navy stations able to hear it:

"Plane very low on gasoline and doubt ability to reach destination. Keep careful lookout."

The next message was addressed to the Tanager, reading:

"Please keep good watch. Gas is about all gone. Think it impossible to get in."

"Running out of gas. Will probably have to land at Aroostook or Tanager. Please stand by."

"Plane low gas. Asking bearings from Aroostook."

The last messages intercepted were fragmentary requests for radio compass bearings from the Aroostook and the Tanager.

Thus, veiled in silence, the last news of the fliers, who had all but accomplished their object, was drawn to a close. An orderly system of search was organized and its limits extended both north and south in an effort to cover all possibilities of rescue, and thus make the necessary allowances for the drift of the seaplane, should she have been floating powerlessly over the waters.

With the days now passed, all hope of ever finding Commander Rodgers and his fellow men have almost closed. Weather conditions had been against them almost from the start and delayed their progress, causing the extravagant expenditure of fuel as a result of the strong adverse winds. The plane when last reported was two hours late on schedule and with the weather continuing to get worse, little hope of their being able to catch up the lost time, and thereby conserving fuel, could be entertained.

With the disappearance of the PN-9, No. 1, the country looses five of its ablest and most courageous men, in the names of:—Commander John Rodgers, Flight Unit Commander, Lieut. B. J. Connell, Flight Navigator, W. H. Bowlin, 1st. Class Aviation Mechanic's Mate, S. R. Pope, Aviation Pilot, and O. G. Stanz, Chief Radio Operator.

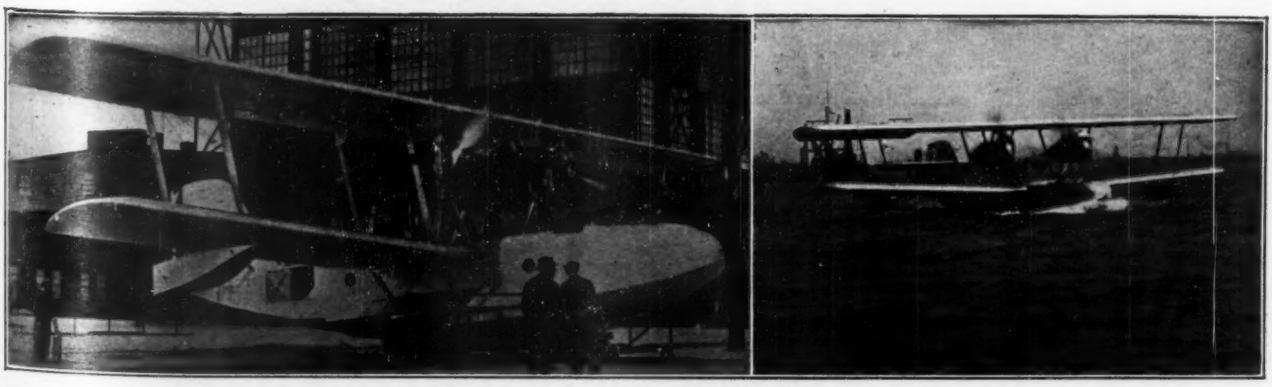
Commander John Rodgers

RODGERS, JOHN, Commander, U. S. Navy; born, Washington, D. C., Jan. 15, 1881.

Educated: U.S.N.A., Annapolis, '05.

Professional: 1905 to 1908, U.S.S. destroyer, Lawrence, Battleship Nebraska and U.S.S. Hull; 1908, commissioned Lt.; 1909-1910, U.S.S. St. Louis and U.S.S. Pennsylvania; 1912, U.S.S. Illinois, Nebraska and Paducah; 1915, submarine duty; 1916, commissioned, Lt. Commander; returned to aviation duty Jan. 1918; Dec. 1918, commanded Division Ten of Submarine Forces with U. S. Fleet; June 1919, minesweeping service, North Sea; Dec. 1919, Executive Officer, U.S.S. Nevada; Nov. 1919, commissioned Commander, June 1921, Recruiting Officer, Baltimore, Md.

Aeronautical Activities: 1911, ordered to Dayton, Ohio, to "confer with the Wright Brothers for instruction in the art of aviation"; Aug. 1911, Naval Academy for aviation duty; Dec. 1911, established Naval Air Station at San Diego, Calif.; May 1912 to Aug. 1912, Naval Academy for aviation duty; July 1922, in command, Naval Air Station, Pearl Harbor, Hawaii; 1925, in command U.S.S. Wright, aircraft tender with Aircraft Squadron, Scouting Fleet; 1925, Senior Officer, non-stop flight from West Coast to Hawaii.



The PN9 on her handling truck and just after landing. It is powered by two Packard A1500, 500 hp. engines. The hull and many of the parts are made of aluminum alloy

Col. Mitchell's Statements on Govt. Aviation

These Contain the Assertions on Which He Expects to be Court Martialed

So that those who did not read the complete statements made by Col. William Mitchell may have them available, they are reprinted. They represent the most daring indictment of the War and Navy Departments ever made by an officer. Many of the assertions are certain to be challenged. They will undoubtedly from the basis of a new Congressional Enquiry.—ED.

"I have been asked from all part of the country to give my opinion about the reasons for the frightful aeronautical accidents and loss of life, equipment and treasure that has occurred during the last few days. This statement therefore is given out publicly by me after mature deliberation and after a sufficient time has elapsed since the terrible accidents to our naval aircraft, to find out something about what happened.

"About what happened, my opinion is as follows: These accidents are the direct result of the incompetency, criminal negligence and almost treasonable administration of the national defense by the Navy and War departments. In their attempts to keep down the development of aviation into an independent department, separate from the Army and Navy and handled by aeronautical experts, and to maintain the existing systems, they have gone to the utmost lengths to carry their point. All aviation policies, schemes and systems are dictated by the non-flying officers of the Army or Navy, who know practically nothing about it. The lives of the airmen are being used merely as pawns in their hands.

"The great Congress of the United States, that makes laws for the organization and use of our air, land and water forces, is treated by these two departments as if it were an organization created for their benefit, to which evidence of any kind, whether true or not, can be given without restraint. Officers and agents sent by the War and Navy departments to Congress have almost always given incomplete, miserably or false information about aeronautics, which either they knew to be false when given or was the result of such gross ignorance of the question that they should not be allowed to appear before a legislative body.

Airmen Bulldozed

"The airmen themselves are bluffed and bulldozed so that they dare not tell the truth in the majority of cases, knowing full well that if they do they will be deprived of their future career, sent to the most out-of-the-way places to prevent their telling the truth and deprived of any chance for advancement unless they subscribe to the dictates of their non-flying bureaucratic superiors. These either distort facts or openly tell falsehoods about aviation to the people and to the Congress.

"Both the War and Navy departments maintain public propaganda agencies which are supposed to publish truthful facts about our national defense to the American people. These departments, remember, are supported by the taxes of the people and were created for the purpose of protecting us from invasion from abroad and from domestic disturbances from within. What has actually happened in these departments is that they have formed a sort of union to perpetuate their own existence, largely irrespective of the public welfare, and acting, as we might say, about a commercial organization that has entire control of a public necessity 'as an illegal combination in restraint of trade.'

"The conduct of affairs by these two departments, as far as aviation is concerned, has been so disgusting in the last few years as to make any self-respecting person ashamed of the clothes he wears. Were it not for the patriotism of our air officers and their absolute confidence in the institutions of the United States, knowing that sooner or later existing conditions would be changed, I doubt if one of them would remain with the colors—certainly not, if he were a real man.

"The story is a long one, beginning practically with the inception of aviation in this country, so I shall mention only a few things in connection with the disgraceful performances which have occurred this summer.

"Seeing no progress in our efforts, which had been continued for years, to convince or even seriousy interest the governing bodies of the War and Navy departments to better our aeronautical condition, we were stirred to further action by the killing of Lieutenant Pierson and Captain Skeel in the dilapidated racing airplanes during last October's air meet.

Races for Propaganda

"This was caused by an arrangement between the Navy and Army that the Navy should take the races one year and the Army should take them the next year, thereby equalizing propaganda, not service. Instead of building new airplanes, our men were given the old crates to fly at those terrific speeds. Of course, they came to pieces, as they were designed for only one race two years before. This was done, in spite of the fact that we had sufficient money to build new ships according to entirely advanced patterns and new safety factors.

"We in the air fraternity then and there decided to put the issue squarely up to Congress and the people. We received an immediate response from the people and Congress, because they saw the right of our proposition, which was to make a single department of national defense, with sub-secretaries for the land, the air and the water, each to have an equal voice in our national defense system. The general scheme, by the way, has been adopted by practically every civilized country in the world. Had this measure reached the floor of the House of Representatives last winter it probably would have passed by a large majority.

"Congress also provided that not less than $50,000 out of moneys already appropriated should be spent for the aerial bombardment of battle ships and shipping board vessels while under their own steam and moving, so as to set at rest any doubt of aircrafts' ability to destroy and sink any seacraft which floats on the water.

"It was evident then that the American people were awakening to the necessity for a change and that if this change were to be prevented by the War and Navy departments, that they must act at once. What was the result Steam was gotten up by the Navy on the one hand to disprove and deprecate the value of air power and show the value of the surface vessels and battleships, and on the part of the Army to fool the public as to the value of anti-aircraft, cannon and machine guns. Any operations by the air service to sink the ships, as provided for by the law of the land, were stopped. Now what have the Army and Navy done to show that the existing obsolete systems should be maintained ?

"First, the great Pacific naval maneuvers—the main features of these were the assembling of a fleet of some 148 surface vessels in the Pacific, the parade of our Pacific coast and entrance into San Francisco harbor and then the trip to Honolulu. Press representatives and congressional committees galore were handled, fed and entertained according to the good old Navy's propaganda system. It was heralded that the Navy had taken the Hawaiian islands.

Outline of War in the Pacific

"Now, let us see what actually would have happened had there been war. Suppose that we had been at war with a Pacific power and this fleet of surface vessels had been in San Francisco harbor. Instantly the Pacific power's submarines would have planted all entrances to the harbor with mines, would have covered all the approaches with these death dealing engines.

"If the surface vessels ever got through these, the whole Pacific ocean would be districted off into squares and to each of these districts submarines would be assigned for the purpose of tracking the surface ships and attacking them.

"These ships would be under constant attack of gunfire from submarines that can carry any size cannon and use projectiles containing gas, high explosives or armor-piercing shells. They use under-water torpedoes which not only hit the side of the ships but will hit their bottom and can produce gas clouds which will completely envelop any fleet.

"If any vessels of the fleet survived the submarine attacks, crossed the sea and came within hundreds of miles of the hostile coast, they would be sent to the bottom forthwith by aircraft.

"If the Pacific maneuver showed anything conclusively, it was that aircraft acting from land bases can destroy any surface fleet coming within their radius of operations. This almost had been amply proved by our bombardment tests in 1921.

"As far as Honolulu is concerned, it is not a position of decisive influence in the control of the Pacific. Its value consists in being an excellent submarine base to act against hostile surface seacraft and submarines. The control position of the Pacific is our own territory of Alaska and the peninsula of Kamchatka, opposite. It is reported that from $50,000,000 to $80,000,000 has been spent just for this Pacific parade of our Navy—more properly, the vessels belonging to the United States because in fact, it is no navy in the modern conception of the term. What would this amount applied to development and improvement of airplanes and submarines have meant !

The West Coast—Hawaiian Flight

"Next, to get publicity and make a noise about what it was doing with aircraft, this so-called Hawaiian flight was arranged for. Even if it had been successfully made to Honolulu, it would have meant little, either commercially or strategically, compared to what a flight to Europe or Asia would. Three airplanes were built to participate in it. These showed nothing novel in design and were untried for this kind of work. One never got away from the Pacific Coast, another flew a few miles out and was forced to land in the water, and one was lost on account of being out of gas somewhere on the high seas.

"Patrol vessels were stationed every 200 mi., a distance entirely too far apart for an experimental flight of this kind, with such primitive flying machines as the PN9's are. Double or triple this number of vessels should have been there. In fact, the whole Pacific fleet should have been placed there, instead of joyriding around the Antipodes.

"As it was, when this slow-moving airplane, going about 75 m.p.h., was first sighted from the destroyers, the destroyers should have steamed out full speed in the direction in which the airplane was going. This would not only indicate the proper course to the plane, but would place the destroyer closer to it in case of accident. As the airplane was moving at only about 75 m.p.h., the destroyer could have been speeded up to within 30 mi. of that speed.

"Why, if they expected to run short of fuel, as indeed they might, did they not make arrangements for refueling the airplane while it was in the air, by another airplane, as we have repeatedly done ? Why did they carry a crew of five when the weight of two men in fuel might have carried the ship through ?

"What happened to this really good-for-nothing, big lumbering flying boat, when its brave navigators began to run short of gas, over a heavy sea ? The probability is that they held her up as long as they could. As they neared the water, caught by a sudden gust, she might have been thrown into a stall and gone down straight under the water. Hope was that some passing fisherman may have picked them up as our Lieutenant Wade was picked up in the North Sea. Our navy did not find him either. All they did was to smash his plane when it was turned over to them by the fishermen. After all, the Hawaiian Islands are not a vital area with our present methods of national defense.

The Shenandoah Disaster

"Then the disaster to the Shenandoah—killing Captain Lansdowne, the last of our really experienced airship captains—a splendid man, with his companions, following in the wake of Captain Mabry and Captain Maxfield, our airship commanders who have gone before.

"I do not know exactly what happened to the poor Shenandoah. She was an experimental ship, built in this country. I believe she was about 50 per cent overweight in her structure. She had broken away from her mooring mast—an inefficient way of handling airships, anyway—last spring, and her whole structure was badly strained.

"I believe that the number of valves in the gas bags containing the helium had been diminished so as to save helium gas, which is expensive in money, but which made the ship more dangerous to the crew. The Shenandoah was going west on a propaganda mission for the Navy Department to offset the adverse publicity caused by the failures in the

Pacific and Arctic. Note: Propaganda and not service is the keynote in these undertakings.

"What business has the navy over the mountains, anyway? Their mission is out in the water—not only out in water, but under the water, out of sight, away from the land. That is why we have the navy.

"No accurate meteorologist arrangements are available for aircraft in this country. The Weather Bureau is under the Department of Agriculture and primarily organized to turn out weather reports affecting onions, cabbages and other crops. While this is very necessary, it is a complete failure as far as we are concerned. I say this after having flown across mountains and bucked their storms hundreds of times.

The Shenandoah Overweight

"The Shenandoah, 50 per cent overweight in her structure, had members strained last spring, possibly some of them disintegrated from the action of the non-freezing compound in the radiators of her engines, wherever this liquid dropped on them, and with the valves in her helium gas bags reduced, strikes a storm. She is caught in an up-current of air. Due to her excessive weight her reserve buoyancy is low.

"She is carried high up by this current and her gas bags begin to expand, due to the altitude. The crew valves her in an attempt to allow the gas to escape, but the automatic valves, reduced in number, do not allow the escape fast enough; the pressure of the expanding gas on the structure tears the ship to pieces. Some of her crew go to eternity. Those who do not escape by miraculously good fortune. No notice of the storm was received in time to avoid it. Her survivors are muzzled by the Navy Department pending a whitewash board. Are these things so, or are they not? I am down here in Texas and have not all the data at hand, but I am sure the facts are practically as stated.

"What results? The Navy Department announces that this shows that America cannot be reached by hostile aircraft. What has that to do with it? The way that America will be reached from Asia is by the way of Alaska. The water that has to be crossed is scarcely wider than the English Channel. The route from Europe is by the same course that the round-the-world fliers took, to Iceland, Greenland and North America, whenever a country gets powerful enough to undertake the operation.

"What has the loss of a seaplane near Honolulu and an airship over the mountain to do with it

"The impression is given to the public at large that the Shenandoah was a modern ship, properly constructed, properly operated and completely equipped. This was not the case. It shakes the faith of the people in airship transportation because they are not given the exact facts on the subject. This is not an argument necessarily for the maintenance of many airships by the government, but it is a demand for the facts in the case, so that we will not be hindered in the commercial development of this splendid aircraft on account of the accident to an airship due to incompetence in the Navy Department and the criminal negligence in the ordering of this trip. If we took the safety valve of a locomotive off to save water in the desert, and it blew up, killing the engineer and passengers, would we say that railways were no good in deserts and go back to camels?

Ordered the Los Angeles

"An interesting sidelight might be thrown on the development of airships in this country. When I came back from the war in 1919 I attempted to get warships for the purpose of making them into airplane carriers. That is, having airplanes take off from them and land on them, so that they could get out in the middle of the ocean if necessary and attack hostile vessels, in case of war. I obtained permission immediately from the then chief of staff, General March, and the then Secretary of War, Secretary Baker. I sent Major Hensley to Europe with money to get the ships. We had even gone so far as to order the gasoline to Germany for the voyage of the ships to this country.

"Mysteriously the order was rescinded—all work was stopped—it was said at the time that it was against the provision of the treaty, which I do not believe was the case. Work had already been begun on the frames by the Germans. This was the ZR-2, rechristened the Los Angeles, which the navy obtained recently, six years after I ordered it. What has it been used for? Nothing but parading around the country. It is evident that whenever a warship is developed as an airplane carrier, the necessity for any naval surface airplane carrier may be done away with. Is this the reason the navy has the Los Angeles?

"The Germans are the only people who have had real experience with airships. They had many a disaster before they learned how to handle them. I have seen German Zeppelins years ago in terrific storms. A storm has little effect on an airship properly constructed and ably handled."

The Arctic Expedition

"What other things has the navy done this summer? After borrowing some airplanes from the army that were entirely inadequate to the work in hand they went on the Macmillan trip to the Arctic. More propaganda! As far as can be learned from a distance, they had a cat-and-dog-fight all the way up and back, between Macmillan, the pilots and the Navy Department, and, of course, got nowhere and did nothing. Is there an airman who does not know that with the little jitneys they took up there the pole could not be reached? Another example, says the Navy Department, of the incapacity of aircraft.

"At last the great anti-aircraft tests took place. A battleship goes out into the sea. She takes the airship Shenandoah and has her tow a target at thirty-three miles an hour, at a known altitude, in broad daylight and on a certain course. Some officers have told me that the dirigible was heading into the wind of an intensity of many miles an hour and that therefore the target really was almost standing still in the air. The navy shoots at it all day long in this position and hits it a few times and publishes to the people of the United States the wonderful results obtained to impress them with the fact that battleships can be protected by anti-aircraft guns, which is absolutely and entirely false.

"What is our navy for? Presumably it is to control lines of sea communication on the high seas. What is it actually? It is entirely and completely outpointed by Great Britain in the Atlantic. What can it do across the Pacific as at present organized? Nothing—against an insular Asiatic power whom you all know.

Naval Costs

"The Navy has about $1,500,000,000 invested in navy yards. The upkeep and depreciation of these amounts to about $150,000,000 a year: How many of these are useless and how many of them are of any profit? Probably not many. Suppose we took $50,000,000 of this and applied it to the development of aircraft and submarines under competent airmen and submarine men? What could we do with it?

"Every time a battleship is built, the ship itself, when it is completed, may cost from $50,000,000 to $75,000,000. It has to be protected by submarines, destroyers, cruisers and aircraft, the total cost of which is around or over $100,000,000, so that every time a battleship is built, the expenditure of $100,000,000 is necessary. I believe a battleship to-day is a useless element in the national defensive armament of the United States. Suppose we had even one half of the cost of a battleship to use in the development of our aircraft and submarines. These are only a few of the things which must be brought up before the people and the coming Congress.

"The navy, to maintain its position, keeps asking for more aircraft, which it cannot use legally, because the legal defense of the land is entrusted to armies. In spite of the legal restrictions, however, but to keep control of aviation and not let it get away, the navy department continually gets more money from Congress by its Washington lobby so as to keep the political support of the aircraft manufacturers, and possibly some others interested in them.

New Aircraft Carriers Obsolete

"This year the navy's estimate for the aircraft amounts to $37,360,248. They only have one aircraft carrier, the Langley, which can go about half as fast as a battleship and which is an obsolete collier. It can hold 36 small airplanes. They are building two aircraft carriers which can hold 60 to 70 planes. These are practically obsolete before they are completed.

"Where is the $37,000,000 for aircraft going? It is going into the land aircraft which have nothing to do with the navy's operations on the seas and which will be used as a political lever for the maintenance of their existing system.

"The War Department, that now is entrusted by law with the aerial defense over the land areas of the United States and its possessions, including the protection of navy yards, asks for $24,582,000. Consider how foolish this is. The navy, an organization charged with going to sea and which must operate from surface vessels, which as a matter of fact are practically obsolete now, and which will afford no real protection to the country in case of an air attack, asking for two thirds more than the army does, which acts from land bases and is specifically charged with the defense of the land areas. The amount allotted to the navy for new aircraft is three times as much as the army.

The Anti-Aircraft Tests Laughable

"Now, let us turn to the War Department. The War Department has done nothing this summer to develop air power and has undertaken to prove by tests that anti-aircraft guns can protect cities, which is known everywhere to be false. They have fixed up a scheme to give constructive hits when the guns firing do not hit the targets at all. The firing has been at targets towed at a constant altitude, over courses which have now been flown hundreds of times, at greatly reduced speeds and never in excess of seventy-five miles an hour. Even this was only because the wind was helping the plane along and under weather conditions that have been ideal. In spite of all this preparation, the results have been laughable.

"As an example of one of these performances, the War Department has taken the lid off for publicity in the Second Corps area—that means around New York—with the result that the Coast Artillery tells the papers the story in greatly exaggerated terms, whereas the chief of air service has been completely muzzled. An interesting example of some of the anti-aircraft target practice was the testing of the listening device for aircraft at Camp Dix, July 27.

"The umpire had told Captain Hall, commanding the airplane bombers at Mitchel Field, that in the next anti-aircraft test he was at liberty to fly under conditions which would be used in war. Captain Hall informed the umpire ahead of time that he would glide into the target. Before this, the Coast Artillery had all their practice with planes that had flown over at a fairly constant altitude and with their motors open.

"The night of the test planes got their proper altitude, played around a litle just out of range of the searchlights and just within range of the listening devices on the ground. The artillery thought that this was easy because they picked up the planes far off and plotted their course absolutely; but all of a sudden sounds from the airplanes stopped. Five or ten minutes later, the bombers dropped their bombs directly on the target. All ground not a sound had been heard before this.

"The fury of the ground officers, artillery officers and others was tremendous. The air service had not acted fair and had fooled them, all of which a kind enemy, of course, in war would never do. Discussion even went so far that it had to be pointed out that it was provided in our bombardment manual to attack a place in this fashion. This is only one instance of the ridiculous performance.

"So far practically the only bombardment airplanes we have in this country have been used up towing these targets for ground shooting which other airplanes could just as well have done. The actual cost out of air service funds appropriated will be approximately $200,000 by the time they are completed this fall.

Coast Artillery Spent Two Billions

"Why are things done this way? The coast artillery sees that it is bound to be greatly reduced on account of the fact that aircraft are a positive coast protection. The coast artillery now has about ninety-two stations. For the ten years prior to 1920 about $2,000,000,000 were spent on coast defense—not two millions, but two billions. What good are these coast defences? None—except those in the immediate vicinity of large cities, where a submarine might emerge at close range and plant a few shells in the city.

"What could the saving do on these useless expenditures is used by the troops of the mobile army stationed in Texas and other frontier points, living in shacks, unequipped with modern conveniences, cut down on every activity and rendered almost incapable, in case the constitution is menaced, of putting down insurrections or executing the laws when all other means fail and patroling our frontiers and holding our insular possessions—what would only a small part of this tremendous expenditure mean in the development of aircraft?

"Not one heavy bomb has been dropped by the air service line units in target practice for two years. Only about four or five modern sights are on hand with the bombing groups; and today I, who know our personnel better than any living man can only put my hand on two perfectly capable bombardment crews to handle our aircraft in case we are attacked.

War Department Studies Flying Pay

"The other thing that the War Department has done this summer is to study how the fliers' pay could be reduced or taken away from them. Think of it, the whole effort of the War Department during the summer was to fool the people into thinking that aircraft cannon are a protection and to keep the rightful flying pay away from the pilots.

"To make a long story short, we are utterly disgusted with the conduct of our military affairs applying to aviation. Our pilots know they are going to be killed if they stay in the service, on account of the methods employed in the old floating coffins that we are still flying. Those pilots that still remain have held on so long that if they got out they would starve. They don't dare open their mouths and tell the truth, because they and their families might be booted out to some obscure place. No finer body ever existed in the make-up of our country than these men.

"There are many able men in the Army—these should be developing the ground army in accordance iwth the needs of the nation. There are many able men in the Navy, but the bureaucracies that both of these national services maintain in Washington have passed all bounds of national decency. They are deluding the public, sacrificing our national defense and not only wasting the money of our citizens, but the lives of its ablest men—our flying officers.

Public Must Know Truth

"This condition must be remedied. It is not in the field of partisan politics, it concerns us all. The American people must know the facts and with their unfailing common sense and ability, they will surely remedy it.

"As far as I am personally concerned, I am looking for no advancement in any service. I have had the finest career that any man could have in the armed service of our United States. I have had the great pleasure of serving in all our campaigns from the Spanish War to the present and of commanding the greatest air forces ever brought together on the planet. I owe the government everything—the government owes me nothing. As a patriotic American citizen, I can stand by no longer and see these disgusting performances by the Navy and War Departments, at the expense of the lives of our people and the delusion of the American public.

"The bodies of my former companions in the air moulder under the soil in America, and Asia, Europe and Africa—many, yes, a great many, sent there directly by official stupidity. We all make mistakes, but the ciriminal mistakes made by armies and navies, whenever they have been allowed to handle aeronautics, show their incompetence. We would not be keeping our trust with our departed comrades were we longer to conceal these facts.

"This, then, is what I have to say on this subject and I hope that every American will hear it."

Second Statement

We must apply a remedy to the conditions existing in our whole national defense system, and in our aeronautics in particular. Preliminary steps should be taken at once and in December decisive action by Congress to put these measures into law.

Nation Needs Department of Defense

We would consolidate our whole national defense under one head and hold one man responsible for the whole thing, under him should be three subsecretaries, one for the army or the land, one for the navy or the water and one for our aeronautics.

Policies pertaining to our national defense should be recommended by the Secretary of National Defense to the President upon the advice of the three subsecretaries. Having three subsecretaries would insure there being no deadlock, as often occurs at the present time between the army and navy. All supplies common to the three services should be gotten by a central agency, so as to avoid competition between the different branches of the Government.

In time of war or threatened emergency, capital should be conscripted as well as labor. All raw materials for the construction of national defense equipment should be obtained and distributed under one head.

According to this system, the army organization would remain much the same as it is at present, except that it would be modernized. The navy organization would also have little change. Any air service that these two departments needed would be permanently assigned to them.

The Secretary of the Air, however, should be entrusted with the whole aronautical department of the Government, which is even more important in time of peace than it is in time of war, because we can employ aviation in useful pursuits during peace, such as carrying the mail, patrolling the forests, surveying the country, aiding agriculture, animal industry and exploration.

The Department of Aeronautics should be divided into three principal subdivisions; one charged with the development of civil aviation. This should provide for the airways throughout the country, the aids to air navigation, and provide an efficient weather service and storm warnings; a legal department, to make recommendations about all air navigtion laws, inspection of pilots and aircraft, so as to be sure the public is safeguarded when traveling or using aircraft.

Would Encourage Civil Aviation

There should also be formed an aeronautical corporation similar to our Inland Waterways Corporation, which should operate between the great centers of population, so as to show what things could be carried safely and at a profit through the air. All figures on this should be made public, so that as soon as possible any civilian company desiring to take it over should be allowed to do so. At the present stage of the development of aeronautics, the Government must assist, as all aeronautics is a national asset.

The second division should be a section of fabrication or construction. In this department, special studies should be made of the kind of aircraft that are necessary, of their airworthiness and safety. They should be made in accordance with the desires and wishes of the flying men, by experts and thoroughly tried out before being issued. No aircraft should be built by the Government. All should be built by civilian organizations so as to keep up competition, invention and initiative by the people.

The third division should be the air force, that part specifically charged with the air defense of the whole country. Provision should be made for a suitable number of well trained flying men and good airplanes to defend this country in case of trouble. Only a small part of the total need be kept constantly under arms; the rest should be working in civil life and the mechanics keeping up their work in the factories and in the industries which go to make up aircraft, being called out for a suitable period of training when necessary.

Practically every civilized country has now adopted this sane, economical and logical system. With a plan of this kind working, the question of who is to command any undertaking is absolutely fixed—if the predominant is to be a sea force, the navy ought to have command of the undertaking and the army and air force report to it.

If it is going to be a land campaign, the army should have charge of it and all the elements of the navy and air forces report to it. If it is to be an air campaign, the air force should have charge and the army and navy report to it. The Secretary of National Defense could determine this.

Says Planes Bar Invasion

With adequate air force in this country, it is difficult to see how any hostile host can touch our soil, coming from Europe or from Asia.

Due to the increased understanding of modern implements of defense, it is probable that in the near future civilized nations of the world will agree to eliminate from their national defense arrangements all useless and expensive elements that now enter into it, and will confine themselves to a defensive armament consisting of aircraft, submarines and sufficient land forces for their needs. This is what the influence of air power is bringing about.

For many years we have had to cater to the old army and navy system—it now should be stopped and a new one instituted. To sidestep this change, propositions certainly will be made to create a special service of aviation within the army for work over land; a special service of aviation in the navy for work over the water, and a special service of aviation within the Department of Commerce to handle civil aeronautics. Although this sounds alluring, it wil be even a worse condition than obtains at present because the old system will still control the aviation in the army, navy and Department of Commerce and will even entrench it more strongly.

This has been tried in other countries—in England, for instance, before a modern organization was made. The Germans used to attack London. The army air force would chase them as far as the coast. There would then be no naval air force, because they were fooling around in flying boats somewhere and under an entirely separate command. The Germans therefore did very much as they pleased.

Civil aviation was assigned to the Board of Trade, which in England is something like our Department of Commerce. It was put under non-fliers who knew absolutely nothing about aviation and one of the first rules they prescribed was "When two airplanes meet in a fog, they should blow their fog horns."

The utter absurdity of the whole thing was quickly understood by the British people and the whole proposition consolidated under one head. The Germans had done this before them in 1916 and other nations either have done it entirely are doing it at present.

A Council of National Defense Needed

In addition to the Department of National Defense, under one Secretary, there should be a council of national defense to consist of the Secretary of State, the Secretary of the Treasury and the Secretary of national defense.

In case the President desired advice on the conditions relative to a present or to prospective emergencies, he would instruct the Secretary of State to convene this council and report to him the result of their deliberations.

The Secretary of State, having called together the Secretary of National Defense and the Secretary of the Treasury, might say: "Gentlemen, it is probable that a certain country, combined with others, may force us to defend ourselves within five years. Mr. Secretary of National Defense, what do you need in the armed forces of this nation to maintain our independence and institutions?"

The Secretary of National Defense might answer: "I need an air force of 2,000 airplanes, a naval force of 400 vessels and an army of half a million men, the cost of which will amount to so much money, with an amount of so much cash immediately available."

The Secretary of State would then ask the Secretary of the Treasury: "How much mony have you that can be applied to this proposition, and how much need we raise by taxation at once?"

After having received the necessary data from the Secretary of the Treasury, the whole report could be quickly made up and given to the President and an absolutely accurate estimate of the whole situation made.

Under our present system, tremendous complications would result in case of an emergency as has been the case in the past.

The terrible conditions in our national aeronautics today is not so much the result of the absolute ignorance of individuals, because often these are selected on the principle of saying "tag, you're it; go play with aviation," when they know nothing about it and are really more to be pitied than blamed. The trouble is with the system, and we flying people insist that our views be known and weighed by the American public."

Aero Supply Expands

The Aero Supply Manufacturing Co., aircraft machine parts and supplies manufactures and dealers, formerly located at 1st Ave. and 27th St., New York, have moved their offices and factory to College Point, Long Island, N. Y.

Formerly known as the Pennsylvania Hardware & Supply Co., the business was established on a small scale by M. R. Porter in 1919 to supply the needs of aircraft manufacturers for rivets, screws, turnbuckles, wire, tubing, steel, etc., and its business has grown rapidly since that time until the company is now the largest engaged exclusively in handling and manufacturing aircraft metal parts.

Coincident with the move to College Point, Mr. Porter, retired as president and George I. Stitch, his principal assistant and business associate for many years, became president of the company.

The other officers are Guy Pomp, vice president and factory manager, G. W. Stephenson, secretary and treasurer. Mr. Stitch extends an invitation to aviation visitors to inspect the new plant at College Point.

The Boeing Mail Plane

Description of the Mail Plane Submitted by the Boeing Airplane Company to the Post Office Department

The Boeing Airplane Co. of Seattle have supplied airplanes to the Army and Navy continuously since the war, the Boeing pursuit plane being one of the most successful ever produced. The PB1 giant flying boat recently produced for the Navy was built with the flight to Hawaii in mind. Their many years of experience are reflected in their latest commercial product, a mail plane designed to exceed the requirements of the Post Office Department.

This machine is a two bay biplane with a combination steel tubing and wood monocoque fuselage. The wings are braced with steel N struts and the usual lift and anti-lift wires in the outer bays. The fittings are sunk in the wings and this makes the cellule very clean looking. The inner bays are braced in a somewhat unusual manner. The two halves of the upper wing meet at the plane of symmetry of the machine and are supported at this point by a cabane of steel struts. From the point where the cabane struts are attached to the upper longerons, two struts on each side run to the lower planes. These struts end at the same fittings as do the inner N struts.

The wings are made of wood and covered with fabric. There are four ailerons, all without balance. The controls consist of pulleys and wires and are carried through the interior of the wing panels. The upper and lower ailerons are connected by a pair of wires. Hand holes are provided in the ends of the lower panels.

As stated above, the fuselage is of mixed monocoque and steel tubing construction. The front and rear sections are steel tubing while the body section is monocoque. The grain of the wood is at an angle of 45 deg. with the axis of the fuselage as can be seen in the rear view of the machine. The mail compartment is directly behind the engine with the pilot's cockpit aft. This seems to be a standard arrangement with machines of this type.

The engine is the standard Liberty XII as called for by the Post Office. It is mounted on a steel tube structure with ash bearers. The radiator is mounted below the engine and is of the cartridge type with a nine inch core. The air enters through an opening under the propeller and exits through louvres behind the radiator. The water temperature is controlled by means of the conventional shutters.

Fuel is delivered to the engine from the 125 gal. tank by means of air pressure. A pressure fire extinguishing system and a metal wall back of the engine are provided for the protection of the pilot and mail. An Aeromarine inertia starter is employed and the starting handle can be seen in the front view of the machine. Current for the electrical equipment of the plane is provided by a Leece-Neville generator.

The landing gear is of the axleless type with Boeing oleo shock absorbers. Each wheel is carried on the end of a pyramid of three steel struts. The track of the wheels is 7 ft. 4 in. The weight of the tail is taken by a steerable steel tailskid. The tailplane is adjustable in the air while the fin is adjustable on the ground. As previously mentioned the fuselage is constructed of steel tubing at the tail and is covered with metal from the leading edge of the fin and tailplane aft. The tailplane is braced by a short strut on the under side and by a wire leading to the top of the fin on top. Neither elevators nor rudder are balanced.

Characteristics

Length, overall		33 ft. 11 in.
Height, overall		12 ft. 2 in.
Span, upper and lower wings		44 ft. 2 in.
Chord, both wings		6 ft. 7 in.
Gap		6 ft. 5 in.
Stagger		None
Airfoil (Wing Section)		Boeing 103
Angle of incidence, upper wing		0 deg.
Angle of incidence, lower wing		0 deg.
Sweepback		0 deg.
Dihedral, upper wing		None
Dihedral, lower wing		2 deg.
Angle of ship when resting on ground		13 deg.
Span, tailplane		14 ft. 8 in.
Area of wings, including ailerons		547 sq. ft.
Area of ailerons		39 sq. ft.
Area of tailplane		43.2 sq. ft.
Area of elevators		26.3 sq. ft.
Area of rudder		12.2 sq. ft.
Area of fin		9.1 sq. ft.
Track of wheels		7 ft. 4 in.
Weight empty		3425 lb.
Useful load	Parachute and equip.	40
	Fuel and oil: Gas 750 and Oil 100 lb.	850
	Crew ..... 180 lb.	180
	Pay load	1000 lb.
Total weight		5495 lb.
Wing loading		10.05 lb./sq. ft.
Power loading—400 hp.		13.71 lb./hp.
Fuel capacity		125 gal.
Endurance at cruising speed		7 hr.
Range		700 mi.
Maximum speed, full load		135 mi./hr.
Landing speed, full load		50 to 55 mi./hr.
Climb to 5,000 ft., full load		8 min.
Climb to 10,000 ft., full load		18 min. 30 sec.
Service ceiling		15,800 ft.

One half rear view of the Boeing mail plane

AIRPORTS AND AIRWAYS

Cleveland, Ohio

By Cy Caldwell

Friends and enemies will be delighted to learn that my vacation was enlivened by an attack of hives. My friends will rejoice that I was afforded this peculiar mental and physical stimulus, while my enemies will derive satisfaction from the thought that I itched most confoundedly. My sole reason for reporting this visitation is to bring thus a little happiness into the lives of others. As hives are an affliction more common to children than to adults, I can suggest only that my years in aviation have doubtless retarded my development and left me in a simple and childish state, susceptible to the diseases of childhood. Next summer I may contract whooping-cough and the croup.

* * *

In response to the suggestion of President Cabot of the N.A.A., that a week in August should be Aviation Week, Cleveland Chapter has done much to arouse public interest in aviation, and has increased its membership by 85 new members. One of the new members is not, let us hasten to add, George D. Hile who has filed in Common Pleas Court a taxpayer's suit seeking to enjoin expenditure by city officials of $1,250,000 for the Municipal Airport. Mr. Hiles feels that his life as a taxpayer would be just as sweet without an Airport.

Cleveland Chapter will have charge of certifying the records of contestants in the Ford Tin Can Tour at the times they arrive at and leave the Cleveland Airport. If they arrive Sunday when the factories are shut down they will be able to see our fair city, which during the week crouches unseen beneath a smoke screen even more smelly than the Long Leaf Pine of Elliott Springs, No'th Cah-linah.

* * *

Devotion to duty in the face of tremendous odds must be recorded of Elmer E. Zimmer, a Naval Inspector at the Glenn L. Martin plant. Confined to hospital for a month, Zimmer was erroneously reported absent without leave, with the natural result that his pay stopped abruptly. This is easy to write, but it is one of the most awful catastrophes that can happen to an inspector. Now, governmental pay is easy to stop, but hard to start. So for weeks this devoted man toiled at his tasks, rejecting this and that, and trying to laugh as he did so, while his heart lay heavy within him. For the pay stayed stopped ! Yet on he labored, grim, unfed, throwing out a wing here and a pontoon there. He worked apparently, for the love of aviation, as daily he wasted away. He was almost gone, yet struggling on, when the error was rectified and a check arrived. We dared not shock him by handing him the whole check. We tore off a corner and showed him, then another bit, then another. Finally, when we had torn it up completely, giving him bit by bit, he understood. But it was too late. The poor fellow ate his check, and passed quietly away.

* * *

Col. Paul Henderson, general manager, National Air Transport, was in Cleveland recently to lease space at the Municipal Airport to erect hangars and shops for his company. Accompanied by City Manager Hopkins and Glenn L. Martin, Colonel Henderson visited the Airport to inspect proposed sites for the buildings. Final arrangements are not yet completed. When asked if he intended moving his factory to the Airport, Mr. Martin replied that it was surprising what a cool summer we were having, and that he looked for an early winter.

City Manager Hopkins and Mr. Martin are interested in the terms under which the *Los Angeles* is offered for commercial use. Mr. Martin found in the Navy Department that plans for leasing the ship for commerce had not been drafted. Rumors that the *Los Angeles* was to be used for night transport from Canada to Cleveland are unfounded on fact. It is stated that the present speed boats are bringing in all we can drink, and quite cheaply, too.

* * *

In his June notes from the Center of Culture, Porter Adams regretted that the air service between the Balsams and New York was not running. The old farm, he said, did not seem the same without the Orioles. Then, along in July, he wrote gaily that service was resumed. He said the farmers in those parts liked to watch the planes go over—though I doubt it. What they want is to see them land in the corn—and pay heavy damages. But now, in August, Porter reports the service discontinued. Poor old Porter ! He hoped it "would be soon resumed," and in his grief split an infinitive wide open. Shade of John Harvard ! Thus hath aviation undermined a noble character ! (Note: This joke will be explained to Akron readers by Professor Maxon of Goodyear's.)

Cincinnati, Ohio

The Dixie Aircraft Co. has been formed here with a capital of $50,000. One building is completed and three more have been started on a six acre tract of land on Cooper Road adjoining Grisard Field. A 54 acre flying field has been secured nearby which will be used after April 1, 1926. The company's purchase assumes the present lease, which prevents immediate possession.

Three types of planes one, two and three place will be manufactured all three of which are now on the market, the company contracting its orders at present. Well-known foreign light power plants of 25, 40 and 80 hp. will be used.

Officers and personnel will be announced after the election of directors which will take place Oct. 2. The company is entirely free of debt and lists assets of $30,000.00 in land, buildings, equipment and engineering.

St. Louis, Mo.

Ben Lichly has gone to Chicago for one or two weeks in a clipped wing Standard. Bud Guerney went to Troy, Mo., during the week. Randy Ensloe bought an Oriole from Robertson Aircraft Corp. and flew it to New York. He also ordered a K6 Standard which will probably be delivered this week. Dan Robertson is still working on his Canuck. He hopes to finish it before Christmas.

New Orleans, La.

By Theodore Ray Liuzza

Ed M. Gueydan, chairman of the postal facilities committee of the Association of Commerce, said recently that he supposed the field conceded by George A. Hero, which is located below Algiers on the Belle Chasse highway, will be used by the Vanderbilt Air Line, which is to be in operation by Christmas between Atlanta and New Orleans, according to an announcement. "The field is the only one under development at the present time," he said. "It is now being developed by the New Orleans Airport Commission, the president of which is L. A. Toombs, adjutant general of Louisiana, and a $2,500 fund is being raised by the commission for this purpose." The field is 2,100 ft. square and is "35 min." from the New Orleans postoffice.

This line will have nothing to do with the Chicago and the New Orleans air mail line which has recently been under the sponsorship of the Association of Commerce. Plans for the initiation of this line are well under way. Postmasters at Jackson, Vicksburg, Memphis, St. Louis and Chicago have been asked by Postmaster Gordon to join with New Orleans in an application to the Postmaster General for a call for bids for the establishment of a New Orleans-Chicago air

mail route. The first reply was recently received from the Jackson postmaster, who advised he was joining in the New Orleans application, and gave assurance of a good quantity of mail. As soon as replies have been received from two or three other postmasters along the proposed route, Postmaster Gordon, it was said, will make a formal application to the Postmaster General for bids.

The bid will be awarded by the government to some service which is reliable. Of the air mail revenue the government will receive two cents to the ounce of mail, and the service to which the bid is awarded will receive eight, according to the Association of Commerce. "Two air mail lines," the Association says, "seem assured for New Orleans."

A new air company was recently formed in New Orleans known as the Alessi Air Service. The company maintains a flying field at Gentilly and Havana streets and besides carrying passengers on sight-seeing excursions in the clouds, does aerial photography and conducts a flying school. Lee Mason and Billy Brooks, the latter a former member of the Gates Flying Circus, are the pilots

A flying circus is held over the company's field each Sunday afternoon. Wing walking, looping, and other stunts are "pulled" for the amusement of the public. Following the circus passengers are carried. The company has done a record business since establishing itself in New Orleans. Three Standard planes are operated and of the many flights made, not a serious mishap has occurred.

* * *

Miss Eleanor McCarthy, a New Orleans girl, is the city's first daughter to take up aviation and make a success of it. Eleanor was taught to fly by Billy Brooks of the Alessi Air Service and owns her own plane, a Standard with Hisso engine. Miss McCarthy's father also has his own plane which he uses for business and pleasure trips.

The New Orleans Model Aeroplane Club after being dormant for the past few months, has resumed its activity. A meeting is to be held early in October at which time the Club will be reorganized and new officers elected. The Club will move to its club rooms shortly, the new location not having yet been announced. One of the features of the reorganization will be a big membership drive in which it is planned to enlist all of New Orleans aviation enthusiasts. It is planned to make the Club one of the best of its kind in the country. Present officers are Lester Giaruso, president; Ben S. Pullen, vice president; Frank Restivo, secretary, and Ted Liuzza, treasurer.

* * *

George Daws, a member of the staff of *The Item-Tribune*, New Orleans' leading afternoon newspaper, has been granted a leave of absence to join the Gates Flying Circus as publicity manager.

It has been rumored about New Orleans that the Gates Flying Circus will return to New Orleans shortly to winter here. The Gates organization is well known here, having performed and carried passengers here for several months straight.

Avalon, Catalina Is.

By Fred V. Lee

The Pacific-Marine Airways operate two HS2L's, powered with Navy type Liberty engines and carry five passengers and pilot. Baggage is limited to twenty-five pounds per passenger. This is the fourth year of operation for the company. Flights are made every day of the year, with the exception of a few days of very rough water in the winter, which do not total over fifteen for the year. Fog and high wind encountered in flights are of very little consequence, not enough to prevent trips across the channel, except as stated above, when the wind is strong enough to cause high waves.

At present the planes are kept on the beach at night, at San Pedro, and tied to a mooring in the bay at Avalon. Mr. Bacon the present owner of the company is contemplating the purchase of a Douglas Cruiser, to be added to the fleet, and erecting a hangar at San Pedro for the planes. In former years, passengers were landed from the planes via skiff, rowed by the trusty "Mech" stationed here at Avalon, but this spring a float and runway were constructed, allowing passengers to step out of the plane and walk a few feet to shore, thereby saving the mechanic for sterner and less arduous tasks.

A. C. Burns is still the hardworking pilot that he was at the start of the season; passengers still line up for their turn to fly with him in his Curtiss boat.

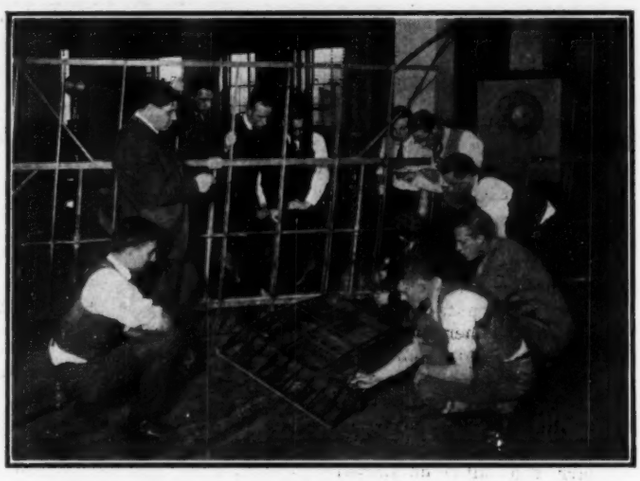


Photo Gilliams

A class of the Daniel Guggenheim School of Aeronautics studying wing construction under Professor Klemin

Chicago, Ill.

By Walter W. Meyer

By the way this section is not appearing in "Airports and Airways" one would think all the fellows had peddled their crates and joined the submarine corps.

As a matter of fact there are half a dozen fields around Chicago with some fifty or sixty ships all more or less in commission. Ashburn Field on the south side is so far south that Johnnie Metzer never hears of the price of gas coming down but they have over twenty planes. Checkerboard on the west varies between ten and fifteen depending on Tony Yackey's turning them out as fast as they crack 'em up over there.

Morton Grove Field on the north where the writer [illegible] his crock boasts thirteen, one temporarily out of comm[illegible] due to Hawkinson's idea that he could show up a steam [illegible] at digging sand out of a sand and gravel pit near the field He didn't succeed—the steam shovel is still working, but the ship will be, again soon.

Then there is the Chicago Flying Club Field on Irving Pk. Blvd. with three ships, Wallace's Field on River Road with three and Heath's Field on River Road farther north with a couple including his ragged old "Solo" which after making several thousand per cent on the investment is about to be retired. This old Standard probably holds the world's record for the number of students soloed on any one plane and the news that it is finally to be retired will be a great shock (and relief) to several hundred fellows who learned to fly on her.

There also is the Air Mail Field on the west that ought to break into the news now and then, for, despite a couple of wonderful cinder runways, the envy of every civilian operator, every so often some eccentric pilot succeeds in suddenly disassembling a perfectly good airplane on it.

The gunmen around Chicago are copping all the headlines but with all the flying fields here there is always something happening that would be of interest to a lot of us poor fliers who can't support a gun.

Anglum, Mo.

The Robertson Aircraft Corp. have had great success with their present policy of training students at a comparatively low rate and have graduated nearly fifty in the last three months. Due to this they have decided to extend their special offer indefinitely as they find it profitable business provided the number of students is kept up.

UNITED STATES AIR FORCES

U. S. ARMY AIR SERVICE

Loening Amphibian Completes Tactical Mission

The Loening Amphibian, which was developed for the Army Air Service, is equally at home on the land or on the water and has been looked forward to as extremely useful in Army Air Service operations along the Atlantic Coast. The Loening Amphibian assigned to Mitchel Field was therefore dispatched recently with Capt. C. William Ford as pilot, to Boston Harbor, to cooperate in the Reserve Coast Artillery maneuvers there, in spotting the fire of the Coast Artillery guns operated from Fort Andrews at the mouth of Boston Harbor.

Ordinarily, if a DH type of land plane had been used, it would have been necessary to operate from the land field at East Boston, several miles away from the Fort, and to have carried on all communications and arrangements by telephone; whereas, the ability of Captain Ford to bring the Amphibian right up to the Fort, below the guns, enabled a direct liaison to be obtained with the Coast Artillery officers, making the entire arrangement very much more convenient and efficient. A complete radio was installed in the plane, operated by the observer, and many flights were made daily throughout an entire week. The amphibian remained anchored overnight, alongside of Fort Andrews, for eight days and was operated entirely as a seaplane. At the end of this time, the plane was flown back to Mitchel Field, landing on the land field there with entirely satisfactory results.

Due to the fact that this is a new type of plane, there has been great interest in its use for the first time in a regular Army project as a standard observation airplane and since the plane was able to do all of the standard work of the two-seater land observation plane and in addition have the complete advantages and safety of a seaplane, officers of the Air Service have expressed their opinion that this plane will apparently supply a long-felt want in the Army Air Service in an entirely successful manner, as this plane, in addition to radio, is also equipped with photographic apparatus and the usual gun equipment.

Mitchel Field

Mitchel Field, Long Island, N. Y., is making extensive preparations for the International Air Races which will be held Oct. 8, 9 and 10 of this year. While the Air Races are to be held under the auspices of the National Aeronautic Association, a committee of citizens of New York are promoting the project, and the Army officials are furnishing the place for the races. Civil and military authorities on Long Island are combining their efforts to police the area during the races. A slight re-arrangement of traffic on Long Island will be made when the races begin, in order that motorists may get from New York City to Mitchel Field easily.

The home pylon has already been set up, and some of the pilots who are going to fly in the races have been trying out the course over which they will fly during the races. An excellent arrangement has been made to render first aid in case of accidents. Army and civilian doctors will be stationed along the course, with ample transportation at intervals of every two miles, and should any airplane be forced down and the aviator sustain injury, he can be reached within a very few minutes. It is not expected that serious accidents will occur, but in the development of new types of planes, elements of weakness sometimes occur during the strain of competition. The Army and Navy have been most careful in their racing planes, a model of one of the racing planes having been built some time ago and sand-tested far beyond the expected strain. This was done in order to insure safety of personnel during the speed races.

Ford Inverted Engines

Louis Meister, test pilot at McCook Field, Dayton, Ohio, and F. W. Heckert of the Power Plant Section, flew the Amphibian airplane to Dearborn, Mich., recently for the purpose of checking up the work of the Ford Company on inverted engines. Several months ago when this company first evinced an interest in the inverted engine project, they sent their engineers to McCook Field to investigate the work done along this line. Blueprints and patterns were loaned them and full information given.

Great interest was aroused at the Ford Field by the performance of the Amphibian, Messrs. Henry and Edsel Ford and their chief engineer, Mr. Mayo, leaving a conference to witness its flight and the demonstration of the retractible landing gear. The inverted Liberty engine developed at McCook Field has passed the experimental stage. The Amphibian is built around it and its performance has proved as reliable as the upright Liberty.

Fairfield A.I.D.

The following is the production of the Repair Shops at the Fairfield Air Intermediate Depot, Fairfield, Ohio, during the month of July; Major Repairs— Airplanes: 7 DH4M2, 1 DH4B, 1 DH4B-M, 7 MB3A, 2 NBS1, 3 JNSE, 1 JNSI, 1 VE9, total 23; Engines—21 Liberty 12, 1 Wright A2, 27 Wright E, 1 Curtiss D12, total 50. Minor Repairs—Airplanes: 14 DH4BM-1, 7 DH4B, 1 DH4BK, 4 DH4M-2, 2 JNSI, 3 JNSE, 3 NBS1, 1 Pt-1, 1 SE5, 2 AT-1, 1 DT-2, 1 TW-3, total 40; Engines—13 Liberty, 1 Wright E, total 14.

The new classification of repair jobs, in accordance with the revised edition of Circular 65-4, has just been put in effect. It will be noted that the number of major overhauls is unusually large, while the minor jobs which heretofore had not been reported at all, make up quite a lengthy list.

The Martin Bomber which has been equipped with superchargers for high altitude flying has just been completed in the Repair Shops under the direction of Capt. Edward Laughlin, Engineer Officer. It was flight tested by Lieut. C. C. Nutt and will soon be flown to Mitchel Field.

THE TRAINING CAMPS

Biggs Field, Tex.

Reserve officers from the 436th and 438th Pursuit Squadrons were in training at Biggs Field, Fort Bliss, Tex., from Aug. 2 to 16. The following officers actually reported for duty: Capt. Erland L. Curtis, Capt. Fred Faesel, 1st Lieut. John R. Caldwell, 1st Lieut. Lloyd J. Andrews, 1st Lieut. Edward L. Irvine, 2nd Lieut. Charles B. Cheese, 2nd Lieut. Harold E. Savory, 2nd Lieut. Vinton E. Barrett, 2nd Lieut. Dewey Bartlo, 2nd Lieut. Charles G. Stanton, and Capt. James G. Espey, Med.-Res.

The camp staff consisted of the following: Major John N. Reynolds, A.S., commanding officer, senior instructor; Capt. Walter Bender, A.S., adjutant, operations officer, gunnery, pistol; Capt. Levy S. Johnson, M.C., flight surgeon; 1st Lieut. Charles Douglas, A.S., flying instructor, radio, pistol; 1st Lieut. Guy H. Gale, A.S., flying instructor, supply officer, trap shooting, pistol; 1st Lieut. L. D. Weddington, A.S., flying instructor, mess officer, photography; 2nd Lieut. Ray H. Clark, A.S., flying instructor, bombing; Staff Sgt. F. O. Tyler, 12th Obsn. Sqdn., flying instructor; Staff Sgt. F. I. Pierce, 12th Obsn. Sqdn., flying instructor.

A total of ten Air Service officers and one Medical officer were trained during the period Aug. 2 to 16, inclusive. Due to the fact that it is not possible for Air Service Reserve officers to perform their regular duties in a squadron without being given a special course in flying, a schedule of flying

and other training was prepared and carried out. This schedule was prepared with the idea uppermost in mind that a reserve officer with an aeronautical rating must first be an expert flier before he can efficiently carry out the duties incident to his rating, regardless of the theoretical knowledge of his duties which he may possess, and all available time was spent in flying training with the result that all officers with pilots ratings were flying solo in training planes and two were sufficiently proficient to fly service type planes and carry out all flying missions.

The organizations utilized for training were the 12th Observation Squadron and the First Photographic Section, Air Service. This training included: Infantry close order drill, preliminary instruction for pistol practice and range firing, squadron administration and operations, flying training, photography, aerial gunnery, bombing with live bombs, trap shooting and lectures on Air Service and new types of airplanes and motors. Reserve officers were detailed as assistants to regular officers in charge of the various sections such as supply, adjutant's engineering, mess, operations, communications, photographic, transportation, etc., and exercised functions of command and leadership under supervision of regular officers.

Army Air Orders

Spec. Or. 188 amended to relieve Maj. Harold A. Strauss, A.S., from duty San Antonio, and to assign him to Kelly Field.

First Lt. James M. Gillespie, A.S., relieved from assignment A.S. Adv. Fly. Sch., and ordered to report to Com. Off., Kelly Field.

First Lt. Raymond Harry Jackson, A.S. Res., Clarendon, Va., to active duty Washington, reverting to inactive status Sept. 14.

Maj. Adlai H. Gilkeson, A.S., Mass. Inst. Tech., Cambridge, to Edgewood Arsenal, Edgewood, Md., for instruction, reporting, upon completion of instruction, to Com. Chem. Warfare Sch.

Sec. Lt. Judson M. Smith, A.S., Chicago, to Brooks Field.

First Lt. John A. Laird, jr., A.S., Kelly Field, to Harvard Grad. Sch. of Bus. Admin. for instruction.

First Lt. Walter E. Richards, A.S., McCook Field, to San Francisco, sailing on transport Nov. 19 for Hawaii Is.

Sec. Lt. James Joseph Welker, A.S. Res., Mitchel Field promoted to First Lt., A.S. Res.

Sec. Lt. Vernon Edgar Abbitt, A.S. Res., Fairfield, to active duty Chanute Field, reverting to inactive status Sept. 13.

Sec. Lts. (A.S. Res.) William E. Beach, Robinson, Ill., Earl David Hensler, Chicago, Manning David Seil, Grayville and Walter Chamberlain Wilson, Aurora, to active duty Brooks Field, reverting Dec. 28 to inactive status.

Sec. Lts. Harold S. Gould, Field Art., Pauline, Nebr. detailed in A.S., Brooks Field.

Maj. Benjamin G. Weir, A.S., Capt. William H. Crom, A.S., Capt. Ivan B. Snell, A.S., First Lt. Reuben D. Biggs, A.S., Washington, to report to director Army Ind. Col., Washington.

Spec. Or. 188 assigning First Lt. Walter K. Burgess, A.S., to Kelly Field, revoked.

Master Serg. Felix Steinle, A.S., Salt Lake City, retired.

Capt. Raymond Edward Vaughan, A.S.R., Piqua, Ohio, to active duty McCook Field, reverting to inactive status Sept. 21.

Resignation of Sec. Lt. Hilton Welborn Long, A.S. accepted.

Sec. Lt. Sampson Dobbs, A.S. Res., Petersburg, Ill., to active duty Brooks Field, reverting to inactive status March 11.

Sec. Lt. Edward Gordon Nabell, II, A.S. Res., Miami, Fla., to active duty, Brooks Field, reverting to inactive status March 12.

Capt. Charles Elbridge Cox, jr., A.S. Res., Indianapolis, to active duty Brooks Field, reverting to inactive status March 12.

Sec. Lts., A.S. Res., John Louis Hosch, Cambridge, Frank Dunne Klein, Roslindale, Mass., Charles Bernard Overacker, jr., Niles, Calif., and Horace Emil Weihmiller, Dayton, to active duty Brooks Field, reverting to inactive status Sept. 11.

Sec. Lts., A.S. Res., William E. Beach, Robinson, Ill. and Manning David Seil, Grayville, Ill., to active duty Brooks Field, reverting to inactive status March 11.

Sec. Lt. Edson William Berlin, A.S. Res., Tulsa, to active duty Brooks Field, reverting to inactive status Sept. 14.

Sec. Lt. Charles Onno Garrels, A.S. Res., Berkeley, Calif., to active duty Brooks Field, reverting to inactive status March 12.

First Lt. Arthur L. McCullough, Corps of Eng., Fort DuPont, detailed to A.S., Brooks Field.

Privates Moss Leslie Harris, Fort Sam Houston, Harold A. Wheaton, Fort Riley, August J. Hurgon, Scott Field, having qualified for appointment as flying cadets will be transferred to A.S. and sent to Brooks Field not later than Sept. 10.

Following officers, A.S., to stations indicated from Kelly Field: Sec. Lts. Robert L. Brookings, and John R. Hawkins, Langley Field, George H. Steel and James Hewins, jr., Phillips Field, Earle E. Partridge, Edward F. Booth (Inf.), Alexander G. Greig, Irving B. Greene, Kelly Field; John J. Williams, Luther S. Smith, Carl L. Crane, John R. Armstrong, Lawrence C. Elliott, Kirtley J. Gregg, Selfridge Field; Ralph E. Fisher, Marshall Field; Walter C. White, Albert F. Glenn, Denis J. Mulligan, Harold C. King, Mitchel Field; Kenneth C. Strother, Cornelius W. Cousland, Glenn L. Davasher, Post Field; Lloyd E. Hunting, Biggs Field; Leslie P. Holcomb (F. Art.) Fort Sam Houston; Thomas D. White, Ralph H. Lawter, Bolling Field; William D. Old, and George A. Whatley, Maxwell Field.

Following enlisted men, A.S., who have qualified for appointment as flying cadets, will be sent to Brooks Field, from places indicated, not later than Sept. 10: Privates Ralph T. Wickford, Boston; Herman E. Buchheim, Langley Field, Corporal Arthur E. Derby, Langley Field, Privates Burdette C. Hughes, Langley Field, Harry I. Downes, Arthur G. Benson, Ford J. Lauer, Clare E. McClure, Charles L. Nichols, Louis R. Zeamans, Chanute Field; Corporal Harold C. Beedle, Scott Field, Privates Roy Judson Caswell, Ernest H. Lawson, Harold F. Payton, Dan F. Voorhees, Scott Field; Privates William Garrett, Otto C. George, Fort Leavenworth; Privates Russell G. Parker, Vaughan T. Ward, Kelly Field; Privates Howard Franklin Jones and James M. Morrison, Crissy Field.

U. S. NAVAL AVIATION

Navy Air Orders

Lt. George R. Fairlamb det. Nav. Sta., Coco Solo, C. Z., to Aircraf. Sqds., Setg. Flt.

Lt. Samuel B. McMurrain det. Bu. Aero. to Aircf. Sqds., Setg. Flt.

Ch. Pay Clk. William A. Swanson det. Nav. Air Sta., Pearl Harbor, to USS Aroostock.

Lt. Comdr. Thales S. Boyd det. Nav. Air Sta., Lakehurst to Navy Yard, N. Y.

Lt. Paul C. Warner det. Bu. Aero., Navy Dept., to Aircf. Sqds., Setg. Flt.

Lt. Comdr. Vincent A. Clarke det. USS Wyoming to temp. duty Nav. Air Sta., Lakehurst.

Lt. John F. Curtis det. USS Raleigh to temp. duty, Nav. Air Sta., Lakehurst.

Lt. Myron J. Walker det. USS Texas to temp. duty Nav. Air Sta., Lakehurst.

Ens. James R. Bell det. USS King, to temp. duty Nav. Air Sta., Lakehurst.

A. P. C. John R. Spencer det. Nav. Air Sta., Pensacola, to Nav. Sta., Key West.

Marine Corps Air Orders

Capt. J. T. Moore det. Kelly Field, to M.B., Quantico.

Maj. C. A. Lutz det. Kelly Field, to Langley Field.

First Lt. F. O. Rogers det. N.A.S. Anacostia to Langley Field.

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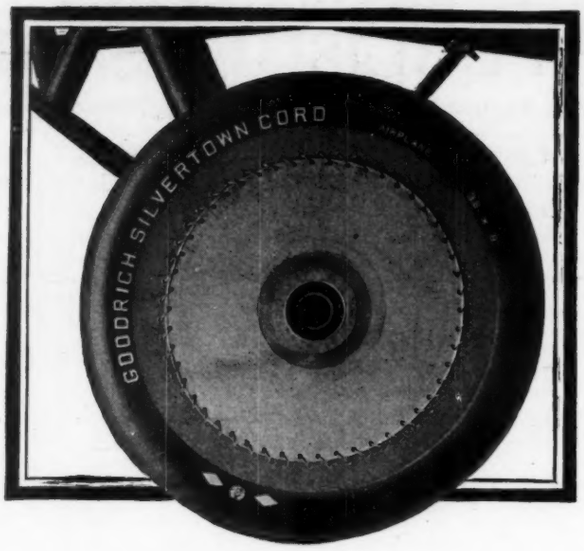

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AERONAUTICAL EQUIPMENT

PUBLISHER'S NEWS LETTER

One of the principles of publishing is to attempt to give in every issue some features or articles that will have an interest for a certain large group of readers and then in the next have different types of articles that will appeal to another group. Only in very bulky publications can there appear enough reading matter to make it a certainty that every reader will find just the sort of news or information that he is most interested in. This problem is particularly difficult in weekly publications. They are necessarily small owing to the spreading of advertising over four issues a month instead of bulking it as is the case in a monthly. As the amount of advertising determines the size of successful publications, weeklies also vary in size from week to week. Sometimes a news story dominates an issue while in others, technical information is more important.

* * * *

Take, for example, the issue in which was printed the details of the new Kansas City Fokker company. There are many AVIATION readers who have heard of the large company promotions in aeronautics but few have ever had the opportunity of studying the financial structure, as it is termed, or the claims on which investors are asked to buy stock. To give an insight into a typical company promotion was the purpose of the publication of such a comprehensive article. Usually, the claims, purposes and prospects of such ventures are given by word of mouth but in this case it was all committed to paper and circulated. As there are many such plans being announced almost every day, it also was timely, entirly aside from the interest in Mr. Fokker planning to leave Europe and settle here.

* * * *

One of the reactions that was unexpected was the comment of a friend that it appeared to him that it might be thought that AVIATION by the publication of this information was assisting in the sale of stock in the new company. Nothing could be further from the facts. AVIATION has repeatedly refused to print the advertising of aircraft stock. It has kept itself particularly free from any influences that might affect its independence. It was therefore surprising to have this inference drawn from an article that seemed to have in it an array of facts and opinions rarely available to the aviation public. Probably only a few of our readers received any such impression, but it is always better to have such impressions corrected no matter how unimportant they may seem to the average reader.

There recently appeared the Bibliography of Aeronautics for 1922, published by the National Advisory Committee for Aeronautics. It is the latest published of five volumes, the first of which was issued by the Smithsonian Institution and the later volumes by the National Advisory Committee. In press are two succeeding volumes—1923 and 1924—which, it is expected will be issued early this fall. The volume for 1922, however, brings the subject almost to date.

* * * *

The National Advisory Committee is one of the most important of the research institutions connected with the Government. It issues publications which are exhaustive and technical, especially for the use of the scientific men working for the solution of problems in the progress and advancement of aeronautics. One of these publications, however, the Bibliography referred to above, is published in such a way that it makes the work of the world available for the use of not only the scientific man, but for others interested in the subject, with the idea to help the student so that he may advance in the subject where the last man left off, and not duplicate work already done.

* * * *

The Bibliography is a servant ready with what you want almost without the asking. Instead of turing to a man, you turn to a book where the references are arranged in alphabetical order under the author, with cross references to the important phases of the subject. Aeronautical journals have been analyzed, as have been the important works of research bodies in the United States, Great Britain, France, Belgium, Italy, Germany, and Japan. In the volume for 1922 over 3,800 references were included in the effort to cover the field. As a reference work, the volume is indispensable to the specialist, the student, and the layman.

* * * *

Perhaps no more useful and convenient book came to AVIATION than the Bibliography. Many requests are received for an index of AVIATION. This book not only indexes AVIATION but practically all other aeronautical publications. The expense of the preparation of this reference book has sometimes raised the question as to whether or not it is worth while to continue its preparation. It is our belief that nothing that the National Advisory Committee for Aeronautics has done or can do renders a more permanent service than the publication of this bibliography.—L.D.G.

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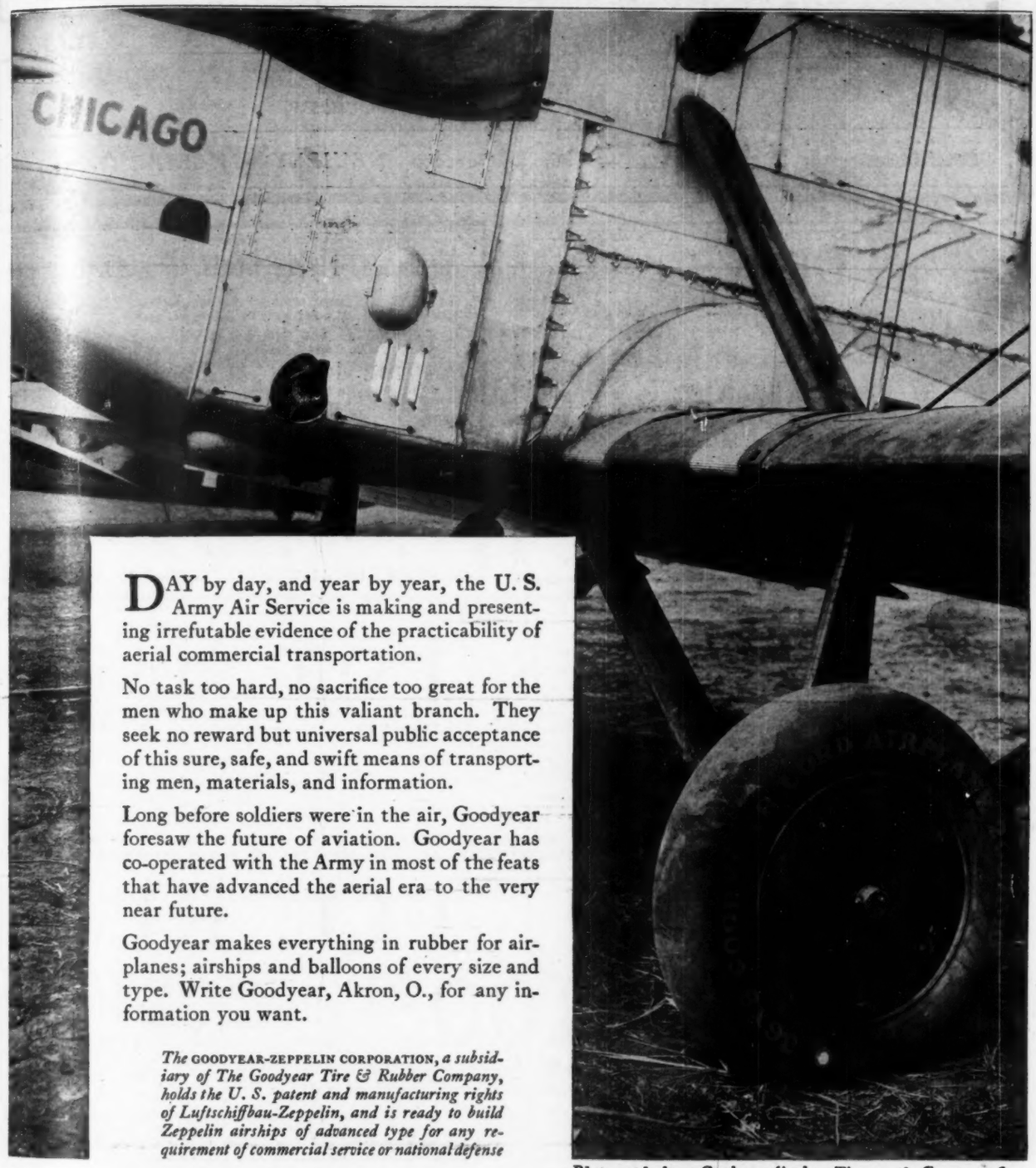

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INDEX TO ADVERTISERS

A

Acles & Pollock, Ltd. 332
Aerial Service Co. 333
Aeroplane, The 333
Aircraft Development Co. 334
Aircraft Service Directory 329-330
Aircraft Supply Co. 330
Alexander Aircraft Co. 334
Anderson Aircraft Manufacturing Co. 328
Atlantic Aircraft Corpn. 308
Auto Engine Works 329

C

Carpenter, Ford A. 330
Cie International Aeronautique 329
Classified Advertising 335
Curtiss Aeroplane & Motor Corp. 339

D

Decatur Aircraft Co. 330-336
Detroit Aviation School 329

E

Eastman Kodak Co. 334
Elias & Bro., Inc., G. 338

G

Gary Flying School 329
Goodrich Rubber Co., B. F. 327
Goodyear Tire & Rubber Co. 331
Guggenheim School of Aeronautics, Daniel 330

H

Hamilton Aero Mfg. Co. 329
Haskelite Mfg. Co. 330
Huff Daland Aero Corp. 329

I

Ireland, G. S. 329

J

Johnson Airplane & Supply Co. 329-338
Johnson Motor Products Co. 330

L

Lamblin, Etablissements 332
Loening Aeronautical Eng. Corp. 334
Logan, Floyd A. 332
Ludington Exhibition Co., Inc. 330

M

Martin, Glenn L., Co., The 306
Monumental Aircraft Co. 330

N

Northrop, Marvin A. 329

O

Ostergaard Aircraft Works 329

P

Perry-Austen Mfg. Co. 334
Phenix Aircraft Products Co. 330
Pioneer Intsrument Co. 329

R

Remington-Burnelli Aircraft Corpn. 336
Robertson Aircraft Corporation 332

S

Scintilla Magneto Corp. 307
Southern Airways, Inc. 329
Spalding Construction Co. 330
Summerill Tubing Co. 338
Swallow Airplane Mfg. Co., The 336

T

Titanine, Inc. 332

W

Wallace Aero Co. 330
Warner, Edward P. 330
Where to Fly 326
Wood Elastic Web Co., J. W. 338
Woodson Engineering Co. 329
Wright Aeronautical Corp. 340

Y

Yackey Aircraft Co. 330

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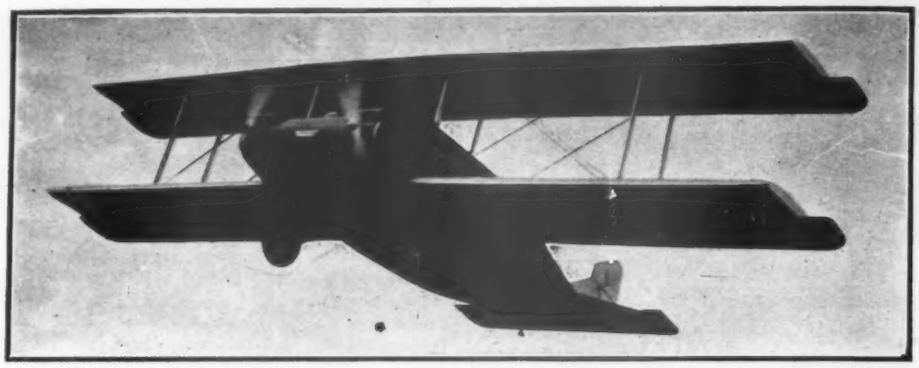

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Weight, including passenger load	3800 lbs.	Wing area	548 sq. ft.
Spread	44′	Useful load	1200 lbs.
Length	29′ 5″	H.P. loading	9½ lbs. per H.P.
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Gap	6′ 6″	Cruising radius	600 miles
Height	10′ 9″	Ceiling	18000 ft.
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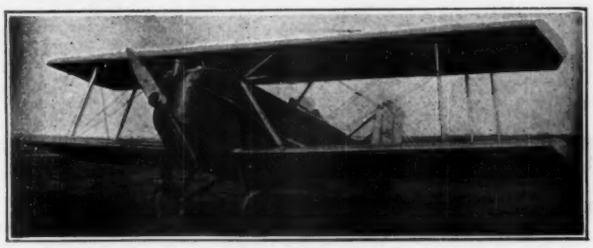

CURTISS CARRIER PIGEON

Let the Operator Keep Faith with the Public

The public demand for the transportation of passengers, mails and express matter by the air route places a definite responsibility upon all those who are studying the problem of air operation.

There seems to be no question that companies now organized will receive the sympathetic support of the public in exact proportion to the judgment, experience and honesty which they exercise in their pioneer operations. The greatest care must be used in organizing along practical and conservative lines The success or failure of this enterprise will depend largely on two factors, personnel and equipment.

PERSONNEL. The personnel will be found available among that group of airmen produced by the war who are devoting their lives to the application of aviation to civilian needs.

EQUIPMENT. Obviously the Aircraft Operating Companies, not themselves designers or builders, must select their equipment from the best which the aircraft industry can supply.

The Curtiss Aeroplane & Motor Company, the oldest airplane and motor producer in the country, and the organization that has been the creative and productive source of the best military airplanes and motors, has directed its creative energy toward the commercial problem. It was the first company to design, build and test an airplane for the specific requirements of the Air Mail Service. The Curtiss Carrier Pigeon was at once accepted by the Post Office. The expert committee of the National Air Transport, Inc., after a coast-to-coast survey of available equipment, recommended the Curtiss Carrier Pigeon, and the company at once placed an order for a quantity of these machines.

As interchangeability of parts with consequent reduction in cost of maintenance was an important factor in the selection of the Carrier Pigeon by one company, so standardization of airplanes of one type and of one manufacturer by the Post Office and the leading operating companies will make efficient and economical operation possible. The use by all pilots of one type, the standardization of interchangeable spare parts for general distribution from Curtiss stores throughout the country, and the reduced price of planes and parts through centralized quantity production will make the Carrier Pigeon the standard commercial airplane. For "feeder lines" the Curtiss Lark, a smaller prototype of the Pigeon, will shortly be available.

ON TO NEW YORK FOR THE 1925 AIR RACES,
MITCHEL FIELD, L. I. OCTOBER 8TH, 9TH, 10TH; 1925

CURTISS AEROPLANE & MOTOR COMPANY, INC.
GARDEN CITY, N. Y. BUFFALO, N. Y.

Wright 200 H.P. Aircooled Engines

OFFER THE FOLLOWING ADVANTAGES

to Air Mail Bidders

Cut the first cost of planes

The first cost of mail planes including new Wright Whirlwind J4 200HP engines is about half the average of the prices recently bid to the P. O. Dept. for mail planes with Liberties. Since the P. O. Dept. makes no guarantees on quantities of air mail the bidder must assume the probable average quantities of mail. A 600 lb. mail load with a Whirlwind is approximately 24,000 letters. If any of these branch lines average as much mail as this they should pay. If they average less why pay more for a large plane to run half empty?

Reduce quantity of planes and spare engines required

Spare planes and spare engines are one of the heaviest expenses of air mail transportation. The ease with which inspections, adjustments and minor repairs are made on Whirlwind engines reduces the quantity of spare engines and spare planes required. Every "stand by" plane and engine cuts into anticipated profits. Planes with Whirlwind engines are more profitable because they are ready to be In The Air more of the time.

Insure regularity of service

The mail planes must be *ready* to leave on schedule time. The turn around time is short. It takes only an hour to change a cylinder or grind a valve in a Whirlwind. Servicing bearings and other parts is proportionately as fast. The mechanic can do almost any job required between runs and Without Taking Engine From Plane.

Cost less to operate

The low cost in time and labor for engine inspection and repairs, the excellent oil and fuel economy (sometimes less than 8 gal. per hr.), the small quantity and reasonable price of spare parts due to the unit construction all make the Whirlwind engines economical to operate.

DURABILITY

A stock Whirlwind engine flew over 100 hrs. at *full throttle* and full RPM without replacement or adjustment of a single part or loss of revs. This is the equivalent of 300 hrs. of normal part throttle flying. Many of the 16 Whirlwinds with the Huff Deland Dusters are over the 100 hr. mark carrying their 600 lbs. of dust with a hard zoom each time the cotton patch is crossed. No greater durability test could be given airplane engines than this daily grind with heavy loads, heat, rain, bad fields, dust, constant take-offs, and operating hundreds of miles from their repair bases. Durability can only be built into an engine or an automobile by constantly improving such parts as are found to give trouble. This is a task of years. A stock production Whirlwind (then Lawrence) won the Marine Trophy at the Detroit Air Meet in 1922. Since then 4 new models have been made with hundreds of changes, most of them for durability.

Decrease liability of crashes

A corollary of engine durability is safety. Dependability next to low cost is the most important characteristic of any transportation equipment. The proved dependability of the Whirlwind engines is one of the best safeguards for safe flying. In the recent Hawaiian maneuvers one squadron of 18 Whirlwinds flew over 2,000 hours with only one forced landing and that due to a stoppage in the fuel tank line.

Give high performance

The saving in weight and resistance of the water radiation systems gives either better performance, higher ceilings, or MORE PAY LOAD.

Winter and Summer Flying

The air cooled Whirlwind engines are better for extreme hot weather flying. Many instances are on record when these air cooled in extremely hot weather were flying perfectly when water cooled could not fly because of boiling. In winter draining radiators, heating water, heated hangars are all obviated by the air cooled.

WARRANTY GUARANTEE

A rigid 90 day "new car warranty" goes with each of these commercial Whirlwind engines. This warranty when backed by a responsible company is a great measure of protection to commercial operators. This warranty has been and will be administered to give real protection.

Service to Customers

We assist our customers in servicing and learning their Whirlwind engines. If they have troubles we send our service men to learn the cause and correct it. This safeguards the purchaser and helps us continue the dependability development of these Whirlwinds. We keep three service men on the road instructing and assisting. When more are needed we will get them. Spare parts are readily obtainable.

With Whirlwind engines your problems are our problems. The Wright Co. can only grow as aviation grows. We will be as earnest a worker for the success of your line as you will be, for *your success is our success*. The advantage of using new engines, made by a strong company strengthened by an unbroken chain of 22 years' experience and which is working to make the Air Mail a National Success will be appreciated by all Air Mail Bidders.

AIR MAIL BIDDERS:—*Write for Bulletin 8A which contains detailed specifications, power curves and full data for these* ***Whirlwind J4 Engines.*** *State the route for which you propose to bid, the probable number of planes you will use, etc.*

WRIGHT AERONAUTICAL CORPORATION, PATERSON, N. J.